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Orality and Performance in Classical Attic Prose

A Linguistic Approach

Alessandro Vatri

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ALESSANDRO VATRI

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Preface

This book addresses a question that is recurrently (albeit often implicitly) raised by literary scholars and cultural historians: is there a linguistic difference between prose texts meant for oral delivery in public and those meant for written circulation and private reception (regardless of differences in genre or authorship)? The book engages first of all with the task of discussing the legitimacy of this question by defining what 'orality' and 'oral performance' mean in a classical Athenian context, by analysing and classifying the situations in which the extant prose texts were meant to be received, and by explaining on which grounds we may expect linguistic features of the texts to be related to such situations. Cultural-historical and anthropological facts suggest that an essential requisite of texts that were conceived for public delivery was that they should be as clear as possible, but do not imply that the opposite was required of texts conceived for private reception. This theoretical consideration lowers the expectations that the initial question may have a positive answer; nevertheless, such a question needs to be addressed analytically. For this purpose, the book embarks on the major methodological effort of reconstructing how clear or how difficult a text would have been to an ancient native listener in the original context of reception. In order to do so, this study endeavours to interpret all the available evidence on the native perception of linguistic difficulty in the light of current research on language comprehension, building on the theoretical insights and experimental findings of modern psycholinguistics. As the reader can tell, this is an ambitious attempt and comes with a number of limitations, some of which may be overcome in the future as experimental research progresses, while others are enforced by the (very) partial nature of our evidence and by the inescapable fact that no experimental tests are possible for the native comprehension of a dead language. One of my major concerns in the design of this part of my study was to make sure that my linguistic analyses are as rigorous, transparent, and replicable as possible, opting in each case for the more cautious interpretation, presenting all necessary caveats, and avoiding arbitrariness as much as possible. In spite of such limitations, the results of a study of a small corpus of samples of Attic

speeches indicate that, if appropriately delivered, Attic prose texts would not generally sound difficult to native speakers. In other words, there is no uncontroversial indication that, in oral performance, texts meant for private reception were linguistically harder than those meant for public delivery. Things would have been different for first-time readers, to whom all prosodic and paralinguistic information was unavailable: certain texts would most likely have been significantly harder to read than others even for ancient native speakers, as is confirmed by ancient primary evidence.

This book started its life as my Oxford doctoral thesis 'The Linguistics of Orality. A Psycholinguistic Approach to Private and Public Performance of Classical Attic Prose', which was supervised by Andreas Willi. If I may borrow a passage from the preface of his own thesis-based monograph ('The Languages of Aristophanes'), as a doctoral student 'I enjoyed the privilege of declaring myself a linguist whenever I spoke to a classicist, and a classicist whenever I spoke to a linguist. There is no better way to be considered a "specialist", to hide one's ignorance, and to obtain much-needed help.' At the time of writing, I would describe myself as a classicist who uses linguistics to address cultural-historical questions, and I hope that readers of this monograph will not find this an implausible claim. This book does presuppose familiarity with Classical Greek, but it does not take too much training in linguistic theory for granted, seeking to provide accessible explanations of linguistic concepts and to present analyses and data in a reader-friendly way. In sections dealing with social history, history of the texts, and rhetorical theory, which could be of interest to readers beyond classical studies, Greek technical terms are transliterated. Quotations are either paraphrased or translated into English, and so are all examples in Classical Greek or modern languages.

The quotation from 'The Languages of Aristophanes' is the least of my debts to Andreas Willi. In June 2008 he gave me a copy of that book and inscribed it 'with all best wishes for the future'. A year after, I came back to Oxford and started working on my DPhil under his supervision, and through the years he guided my first steps into academic adulthood with constant support and encouragement as well as pragmatism and intellectual honesty. His best wishes were indeed most effective: I could not have wished for a better, more rewarding, and more enriching experience from an intellectual, professional, and personal point of view. I am also extremely grateful to

have been mentored and advised by Philomen Probert, who followed the development of this work at different stages, from my first-year drafts to the final revised version, which she patiently went through several times as I prepared it for publication. It was a true privilege to be guided through this process by a scholar whose extraordinary intelligence, learning, and rigour match her great benevolence, generosity, and helpfulness, as well as her contagious enthusiasm for scholarship. I also wish to thank my examiners, Rosalind Thomas and Helma Dik, whose criticism and advice greatly helped me reconcile the two souls of this work (the cultural-historical and the linguistic) with each other.

It is something of a cliché to put 'privileged' and 'Oxford' in the same sentence, but no other adjective could better describe how I feel about my experience at the University. Here I had the opportunity to receive support and valuable feedback from Gregory Hutchinson and Tobias Reinhardt, who followed and encouraged my work from the very beginning, as well as Tim Whitmarsh and all the participants in the Comparative Philology and General Linguistics seminars, at which I had the opportunity to present my ideas and results as they were taking shape. I especially wish to thank John Penney, Peter Barber, Luuk Huitink, Eleanor Dickey, Wolfgang de Melo, Louise Mycock, Matthew Husband, and Ash Asudeh for their benevolent straightforwardness and constructive criticism. In the same context, I also had the unique opportunity to present and discuss my work before the late Martin West: he still is, and will always be, one of the prospective readers I have in mind when I write academically. I am most grateful to Wolfson College and the Faculty of Classics for the Isaiah Berlin Scholarship I was awarded in 2011.

My debt reaches well beyond the dreaming spires. Across the North Sea, I received much support and encouragement—as well as extremely intelligent, constructive, and stimulating criticism—from Ineke Sluiter. I also wish to thank her and Antje Wessels for inviting me to the colloquium 'Obscurity' (Leiden, 15 November 2013), at which I presented many of the materials constituting this book. On that occasion, my paper was responded to by Glenn Most, who made many useful comments and remarks. My grasp of ancient rhetorical theory greatly profited from the advice of Casper de Jonge, for whose kind help and support I am most grateful. In this connection, I wish to express my gratitude to the participants in the seminar series 'Systems of Style in Ancient Rhetoric and Literary Criticism' (Oxford

and University College London, 2015), which I co-organized with Tzu-i Liao. I also wish to thank the convenors of, and participants in, conferences and seminars at which I had the chance to get valuable feedback about my work—among others, Chris Carey, Gesine Manuwald, Jonathan Powell, Michael Gagarin, Christos Kremmydas, Stephen Colvin, and Lene Rubinstein. Anke Lüdeling taught me what corpus linguistics can and especially *cannot* do. Amir Zeldes showed me how to use statistics in a sound way (and should not be blamed for my shortcomings!). Albio Cesare Cassio and Marina Passalacqua supported me throughout my academic life and greatly encouraged me in the writing of this book. Many competent friends helped me clarify my less-than-linear thoughts as we chatted over a cup of tea, a *biertje*, a *φραπέ*, or an *aperitivo*. I wish to thank especially Tzu-i Liao, Giuseppe Pezzini, Elizabeth Koier, Danae Baffa, Annemieke Drummen, Barbara McGillivray, Ana Kotarcic, Eleonora Sausa, Barbara Fero, Giuseppe Celano, and Nicolas Bertrand. I also wish to thank Gregory Crane and the other organizers of the National Endowment for the Humanities Institute for Advanced Technology in the Digital Humanities 'Working with Text in a Digital Age' (Perseus Project, Tufts University, 2012): what I learnt there proved truly decisive for my research. Karen Collis kindly proofread the manuscript of this book.

My doctoral research in Oxford would not have been possible without the support of my father and aunts. However, this monograph will not be dedicated only to my family. Through my first six years at Oxford, one of my greatest privileges was to enjoy the familiarity, scholarly advice, and constant support of Anna Morpurgo Davies. Several fond memories of her are connected to the history of this work, whose ultimate inspiration lies in the teaching of another extraordinary Roman. In the summer of 2008, weeks after Andreas Willi gave me a copy of his book, Luigi Enrico Rossi inscribed an offprint of one of his articles 'Ad Alessandro, abile *perspicuizzatore*' (with a neologism of his own). I am doing my best to live up to their expectations.

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Abbreviations and Editions Used

Names and works of ancient authors are abbreviated as in the *Diccionario Griego-Español*, edited by Francisco R. Adrados and Juan Rodríguez Somolinos (Madrid, 1980–), whose list extends that of LSJ. The titles of periodicals are abbreviated as in *L'Année philologique*.

The linguistic analyses presented in Chapter 5 are based on the digital texts available from the *Perseus Digital Library* and following the editions listed below. All texts have been collated with more recent editions and commentaries, to which reference is made whenever necessary in the analyses of specific passages.

Translations are mine except when otherwise specified, and are generally meant to assist the reader through the discussion of the Greek text. As a consequence, most of them aim to be as literal as possible and almost to gloss the text, to the detriment of any literary ambition.

Alcid. *Soph.*	Alcidamas, *On Sophists**
DK	Hermann Diels (ed.), rev. Walther Kranz, *Die Fragmente der Vorsokratiker*, 6th edn (Berlin: Weidmann, 1951).
FGrHist	Felix Jacoby (ed.), *Die Fragmente der griechischen Historiker* (Berlin: Weidmann, 1923–9, Leiden: Brill, 1943–58).
FHG	Karl Müller (ed.), *Fragmenta Historicorum Graecorum* (Paris, 1849–85).
K-G	Raphael Kühner, rev. Bernhard Gerth, *Ausführliche Grammatik der griechischen Sprache*, 3rd edn, part 2 (Hannover/Leipzig: Hahnsche Buchhandlung, 1898–1904).
LSJ	Henry G. Liddell, Robert Scott, Henry S. Jones, Roderick McKenzie, Peter G. W. Glare, and Anne A. Thompson, *A Greek–English Lexicon*, 9th edn with revised supplement (Oxford, 1996).
Nauck^2	J. August Nauck (ed.), *Tragicorum graecorum fragmenta*, 2nd edn (Leipzig: Teubner, 1889).
PMG	Denys L. Page (ed.), *Poetae melici graeci* (Oxford: Clarendon Press, 1962).
Rh.Al.	*Rhetoric to Alexander**
Σ	*scholion*
TLG	Thesaurus Linguae Graecae® Digital Library. Ed. Maria C. Pantelia. University of California, Irvine. http://www.tlg.uci.edu

TrGF II	Richard Kannicht and Bruno Snell (eds.), *Tragicorum Graecorum Fragmenta.* Vol. 2: *Fragmenta Adespota, Testimonia Volumini 1 Addenda, Indices ad Volumina 1 et 2*, 2nd edn (Göttingen: Vandenhoeck & Ruprecht, 2007).

* Abbreviation from LSJ

EDITIONS USED FOR LINGUISTIC ANALYSIS IN CHAPTER 5

Antiphon	Maidment (Loeb Classical Library, 1941)
Demosthenes	Butcher (Oxford, 1903)
Hyperides	Burtt (Loeb Classical Library, 1962)
Isocrates	Norlin (Loeb Classical Library, 1980)
Lysias	Thalheim (Teubner, 1901)
Plato	Burnet (Oxford, 1903)
Thucydides	Stuart-Jones (Oxford, 1942)

1

The Orality of Attic Prose

1.1 A MANIFOLD CONCEPT

In the fifth and fourth centuries BC, Athens saw the rise of writing as a vehicle for the composition, transmission, and dissemination of literary texts, while oral performance persisted as the most common medium of publication and reception (Knox 1985: 7). The prose texts that were produced and circulated in this cultural setting belong to genres that relate to oral communication in a number of ways, some (such as speeches and dialogues) more obvious than others (e.g. technical or philosophical treatises). The bearing of this relation on the nature of the extant texts—including their linguistic/stylistic form—has been explored from a variety of perspectives, which reflect different understandings of the concept of 'orality'. This theme has been widely explored by both anthropologists and literary scholars far beyond the study of ancient Greece. Lord (1995: 187–202) identifies three 'schools' in the general literature. The first one, which Lord calls the 'philosophical school', is concerned with the psychological, sociological, and, of course, philosophical implications of the absence of writing (and of its introduction) in human societies and cultures, as well as the effects of this technology on the human mind (these are either denied or affirmed, in a deterministic perspective; see 3.2). The second 'school' takes the adjective 'oral' in a literal sense as referring to all non-written verbal communication. From this point of view, all forms of expression that do not use the written medium as a primary means of dissemination are to be regarded as oral, regardless of the medium by which they are transmitted and of the use of writing in the composition process (cf. Bakker 1997: 23). The third 'school' is the 'philological' one, as Lord terms it, and focuses on the specific technique of composition, performance, and transmission

that characterizes traditional oral poetry in a number of cultures. In this sense, orality is 'a property of literary language and hence of literary texts' (Bakker 1997: 8) and has a very specialized meaning. The 'philosophical' and 'philological' perspectives on orality transcend the medium as such; that is, there is no reason to assume that traces of 'philosophical' and 'philological' orality may not appear in written texts. On the other hand, the assumption that 'philosophically' and 'philologically' oral features should characterize 'literally' oral texts is not straightforward. This connection is not impossible, but it depends on the socio-cultural expectations for the form and content of the genre to which a stretch of language belongs. In other words, an 'oral mentality' or the 'oral style' of traditional storytelling may characterize texts meant for oral communication if they are expected to do so in a given culture. This, of course, needs to be proven on a case-by-case basis and may not be taken for granted for the prose genres that circulated in classical Athens.

Conversely, in a 'literalist' perspective, the oral nature of a text is determined primarily by the oral medium or, more precisely, by the status of the text as an oral act of communication in a specific socio-cultural context. The written codification of the text is inconsequential to this definition of orality, which simply requires that the oral medium should come into play at some point in the history of a text and its use. As we shall see (in Chapter 3), the meeting of this requirement may be envisaged for virtually all of the extant Attic prose texts at the time of their composition and/or (oral or written) publication. In this respect, a 'literalist' approach to the orality of Attic prose is fully justified. An important difference between this outlook on orality and the 'philological' and 'philosophical' ones lies in the approach to the identification of the factors that manifest the oral nature of a text. In 'philological' and 'philosophical' perspectives, orality is assumed to be revealed by textual and linguistic features that characterize genres connected to oral composition and performance in a specific socio-cultural context, or by elements in the content and presentation that are assumed to identify an 'oral mindset'. This is not the case with the 'literalist' perspective, in which a text should not be regarded as oral on the grounds of the presence of features assumed to be 'oral' a priori, but only based on the fact that it was meant for some form of oral communication in a given context. On the other hand, the existence of markers of 'literal' orality may be hypothesized based on at least two considerations.

First, oral communication places a number of constraints on the speaker, due to its real-time, 'face-to-face' nature. At the same time, it may exploit a number of resources unavailable to writers and readers. These include paralinguistic elements such as intonation, rhythm,[1] flow speed, and pauses, as well as non-linguistic cues. In general, oral communication has a higher degree of multisensoriality (cf. Scollon and Scollon 1995), which enables speakers to convey relevant information through the non-verbal context. Conversely, writers need to encode most information into language, turning it into co-text[2] (cf. Oesterreicher 1997: 209–10; of course, written communication may use non-verbal contexts such as the *mise-en-page* or other visual formatting features). Theoretically, texts composed for written or oral communication may be more or less optimized to maximally exploit the resources of either modality and to fit its constraints, and the degrees of optimization for either modality may be thought of as independent continua. A case in point is that of theatrical scripts, which are, by definition, optimized for oral recitation. However, marginalia and stage directions (which, in performance, are all turned into non-linguistic contexts) increase the optimality of the text for written communication. The high degree of optimization for oral communication does not imply a correspondingly low degree of optimization for written communication. Arguably, a text optimized for oral communication may not be equally well optimized for written communication, but written optimization need not be as low as would be entailed by a binary opposition along one continuum with oral and written optimization as poles.

The second consideration is that the association of certain linguistic features with oral communication may be culturally determined: features that may be not directly connected to the communicative constraints and resources of the oral medium come to be associated with orality on purely cultural and situational grounds. From a methodological point of view, this implies that 'culturally' oral features may be identified in 'literally' oral texts as culture- and situation-specific, rather than universal or essential, markers of orality. The oral connotation of such markers is a secondary one, as their primary function is

[1] Even though rhythm is related to the phonological features of an utterance, its phonetic implementation rests on the 'strategies for mapping between text and acoustics' (Loukina et al. 2013: 372) used by individual speakers.

[2] See Brown and Yule 1983: 46–50.

related to the communicative strategies of the speaker in a given communicative situation. For instance, markers of emotional involvement and interpersonal closeness may characterize the language employed by two friends as they talk about personal emotional matters. In sociolinguistics, linguistic varieties defined by their communicative circumstances and purposes are called registers (cf. Biber 2009: 823). Registers are commonly associated with genres (Willi 2010b: 297–8). These may be defined as recurring message types which tend to be identified by traditionally recognized formal characteristics (cf. Hymes 1974: 61–2, Ferguson 1994: 21) within a speech community (a social group that shares 'knowledge of at least one form of speech, and knowledge also of its patterns of use', Hymes 1974: 51). By this definition, genres may be understood as cultural (as opposed to functional) categories. Going back to the example, the linguistic variety used by the two friends is the register of intimate conversation; this may be regarded as a genre, if 'intimate conversation' is recognized as a relatively discrete type of verbal communication in the culture in which the conversation between the friends takes place. The association of the genre 'intimate conversation' with its register may entail the connection of the linguistic features that characterize that register to the cultural category 'intimate conversation'. This connection may overshadow the original communicative function of the linguistic features. For instance, as far as involvement and closeness are concerned, the respective linguistic markers would be perceived rather as characteristics of 'intimate conversation' than as instrumental to their genuine communicative purposes. Furthermore, the shift from medium-related to cultural function may create an association between the linguistic features of a register and the typical communicative setting of the corresponding genre. If 'intimate conversation' normally uses the oral physical channel, the chances are that markers of involvement and closeness come to be associated with orality, even though their function is not directly related to the oral medium and they may occasionally surface in written genres as well.

Let us further illustrate this point with an instructive example. Brown and Yule (1983: 14–19), among others, describe spoken language as characterized by a number of features (relatively simple syntax, short chunks, small number of passive constructions, etc.) connected to the constraints of real-time production and the impossibility for the speaker to plan carefully enough (cf. Chafe 1994: 43, Häcki Buhofer 2000: 256). These features convey an impression of

spontaneity and unsophistication. However, the constraints that would engender them do not apply to all oral forms of expression. Oral literature, in the literal sense of literature composed without the technological support of writing, is a good example. Oral literary pieces are not always improvised or created contextually to performance. Anthropologists have observed, for instance, that in a number of Pacific oral cultures composition of dance songs takes place separately from performance, up to several months before the occasion. Such songs are performed chorally and are necessarily based on an agreed correct text for all the performers to memorize. Singers learn the songs through a series of rehearsals, which are often led by the author himself; besides, the poetic individuality of the author is fully acknowledged and given recognition (Finnegan 1988: 95–8, 101–9; Finnegan 1979: 73–86 discusses similar cases in other oral cultures; cf. Thomas 1992: 38–9). On this point, Allen (1973: 13–14) distinguishes two types of oral composition; namely, composition in performance in the presence of the audience, and composition in private, as the long verse and prose oral tradition of ancient India exemplifies. Lord (1995: 195) describes cases of oral composition separate from performance as 'written composition without writing', but this position admittedly rejects a literal interpretation of the meaning of 'orality'. From a 'literalist' perspective, careful preparation of a literary composition need not be automatically interpreted as a sign of writtenness. Analogously, lack of planning need not be regarded as a sign of orality, as is indicated by the fact that it characterizes certain forms of writing constrained by the necessity of real-time interaction (e.g. instant messaging, cf. Crystal 2010: 235).

In addition, the constraints of real-time oral communication may be mitigated both without the use of writing and without preparation and rote memorization before the occasion. This is illustrated by the case of ancient Greek oral literature, for which memorization and transmission does not concern the exact wording but involves themes, images, and formulae, with the additional constraint of metre (Bakker 1997: 20–1, 56; cf. Rubin 1995). Even though no epic performance could be the exact repetition of another, 'reinstantiation, recreation, [and] reiterability' across performances were cultural desiderata for epic recitation, as Bakker (1997: 21) observes. Fluent linguistic production under these constraints requires a technique which must be learnt and mastered by the oral poet and which ultimately simplifies his job, effectively countering—at least to some

extent—the pressure exerted by the constraints that characterize real-time oral communication. Such is the case, for instance, with formulaic language. Formulaic sequences are indeed very common in ordinary speech (Wray 2002: 100) even though they often appear to violate a number of phonological, syntactic, semantic, and lexical rules (Wray 2002: 261). Certain sets of formulae are restricted to specific registers related to high-pressure communicative situations; modern examples include sports commentaries, auctions, or weather forecasts. Formulae may reduce the processing effort of the speaker, even though this is not their only function, and not always their primary one (Wray 2002: 69–102). The linguistic expressions resulting from the employment of this and other techniques necessarily departs from spontaneous speech in several respects. In general, Bakker (1997) has shown that the 'oral style' of traditional storytelling can be conceived of as a stylization of ordinary speech; that is, its defining features may effectively be explained as 'special' instances of linguistic devices that commonly occur in ordinary oral communication. Such a diversion is related to the medium but specific to the genre and, of course, is not to be expected in all oral registers (cf. Finnegan 1979: 86–7). On the other hand, the sophistication of the 'oral style' of Greek epic poetry does not point to any less 'literally oral' status of the registers used in epic performances.

Sophistication and perceived lack of spontaneity may also characterize more interactive forms of oral communication. For example, the traditional Western ideal of eloquence connects elevated, noble, serious, or witty talk to polished and accurate language—to 'sounding like a printed page'—both in public speaking and in conversation (Lakoff 1982: 243–4). This ideal is symptomatic of a culture-specific perception of the primacy of careful self-expression; this comes to be associated with writing because it is easier to achieve in off-line linguistic production, and thus is perceived as an all the more praiseworthy skill in individuals who display it in on-line, extempore communication. A counterpart of this perception is to be found precisely in classical Athens, where such an ability could be given a negative connotation. For instance, Aeschines' natural talent for public speaking was reportedly turned against him by Demosthenes, who used it as grounds for describing him as a deceitful siren (Aeschin. 3.228–9). Ostensible sophistication could be regarded as untrustworthy in 'pragmatic' public speaking (that is, in forensic and deliberative oratory, cf. Walker 2000: 7–10), as is underlined by

Alcidamas (*Soph.* 12–13) and Aristotle (*Rh.* 1404b18–21; cf. Ober 1989: 166 and 3.3.5). It is a common topos of forensic rhetoric to present oneself as a naïve and unskilled speaker (Ober 1989: 174–7; see for instance Antipho 5.1–7, D. 22.4, Lys. 17.1, 19.2, 31.4, Hyp. 1.19–20)—a trick exposed by Demosthenes himself (21.141)—or, at least, as one who expresses himself plainly and spontaneously (Pl. *Ap.* 17c, D. 58.41, 58.61). Similarly, political contexts required that speakers create 'a façade of extemporaneity' (Carey 2007: 246). Sophistication was commonly taken as a sign of preparation, which was assumed to involve writing and memorizing the speech (cf. Alcid. *Soph.*). As a consequence, the negative connotation of sophistication was extended to written composition. On these grounds, one could discredit an opponent by alleging that he had composed his speech in writing (cf. *Rh.Al.* 36.37–9, 1444a16–34). In his forensic production, for instance, Demosthenes apologizes for having prepared his speech before the occasion (21.191), and he elsewhere simulates improvisation by the expedient of faking forgetfulness (e.g. 19.234, 21.110, cf. Lavency 1964: 124, MacDowell 1990: 27, MacDowell 2009: 3, and Thomas 2011: 171). On the other hand, sophistication and written preparation are described as perfectly at home in another spoken genre, epideictic rhetoric (Alcid. *Soph.* 31, Arist. *Rh.* 1414a18; cf. 1.3 below), not to mention drama and poetry (cf. *Soph.* 14). This confirms that 'writtenness' as hinted at by the Attic sources concerns composition and, to a certain extent, transmission and circulation (cf. Alcid. *Soph.* 28, Arist. *Rh.* 1413b12–16); in short, it refers to the physical existence of a written text and to its use in relation with different communicative situations (as will be discussed in 1.3, cf. 3.1). Quite importantly, the contrast between careful and spontaneous language does not correspond to that between the media through which the message is communicated. Certain oral genres may require a high degree of preparation, which entails that the suitability of spontaneous or careful expression depends on cultural, rather than medium-related, factors. In other words, spontaneity may be regarded as a perceived marker of 'orality' only in a culture-specific conceptualization of this notion.

To sum up, 'literally' oral texts may be marked by features that can be ascribed on the one hand to the optimization of the linguistic form for the constraints and resources of oral communication, and on the other hand to the communicative strategies that are prototypically connected to the spoken word in a given speech community.

Arguably, the presence of features of both orders in discourse should indicate that the speaker or writer produced language through the set of mental habits associated with oral communication within his or her speech community. Such habits define the 'oral conception' of discourse. According to Oesterreicher (1997: 193–5), this is prototypically reflected by 'immediate' and informal language, whereas written conception is associated with 'distance', formality, and elaboration. Non-prototypical 'literally' oral and written registers, however, may well fail to show unequivocal signs of their respective conception. This is to be expected, if only because not all situations in which oral communication takes place constrain speakers in the same way (cf. 1.3 and Chapter 2), and not all oral genres share the same communicative priorities and strategies. From a conceptional point of view, some registers may simply be more or less oral than others—in other words, more or less different from prototypically oral and prototypically written registers—regardless of the 'literal' medium of communication they use. It is also significant that the difference between oral and written conception covers a continuum ranging between two poles (Oesterreicher 1997: 192–3, cf. Tannen 1982b, Chafe 1982: 49), while the dichotomy between the oral and written medium is a binary opposition. As such, this may not reflect the potentially infinite intermediate degrees of orality/writtenness implied by the scalar distinction of conception. All of this points to the disconnection of conception from the medium of communication, which Bakker (1999: 30) illustrates with a clear example:

> A given discourse may be oral as to its conception, but written as to its medium: it has been written down, but does not display the features that we normally associate with written discourse. Conversely, a discourse may be written, i.e., literate, as to its conception, and oral ('spoken') as to its medium. This often happens in the oral presentation of academic papers, when the author has not succeeded in hiding the 'writtenness' of the discourse in question.

If medium and conception are independent of one another, it follows that a mere change of medium (transcoding) does not alter the conceptional nature of discourse (Oesterreicher 1997: 195–6)[3] and,

[3] Conceptionally oral discourse may either be simply recorded in writing (transcription, *Verschriftung*) or be turned into conceptionally written discourse (textualization, *Verschriftlichung*). Cf. Bakker 1997: 25, n. 22, 209–10.

as a consequence, that we should not expect to find consistent linguistic variation to depend directly on the physical channel of communication alone. In fact, it has been an exceptionally difficult task for linguists to pinpoint the markers of 'literal' orality with a good degree of generality. As we shall see, the results of field and experimental research in general linguistics suggest that a universal criterion that consistently distinguishes medially written from medially oral texts from a linguistic point of view might well not exist, and that this distinction might be altogether misconceived.

1.2 ORAL LANGUAGE(S) AND ORAL STYLE(S)

Systematic research on the difference between written and spoken language has a relatively recent history and may be traced back to the 1920s, as the dated but still useful literature review compiled by Chafe and Tannen (1987) describes. One of the challenges faced by investigators is the difficulty of controlling for other factors that may determine the linguistic and communicative properties of a text or utterance, and several of the features that were assumed to characterize spoken or written language proved to be independent of the medium or, at least, of the medium alone. A case in point is complexity of sentence structure, a property which tends to be ascribed to written language. An experimental study conducted by Beaman (1984) put this idea to the test and found that spoken language has as many, if not more, subordinate clauses than written language. This indicates that complexity relates more directly to differences in purpose, formality, or register, than to distinctions of medium (cf. also Halford 1990). The same applies to the twofold distinction between speaking and writing outlined by Chafe (1982). Chafe focuses on the fact that writing is a slower process than speaking and that speakers, unlike writers, may interact directly with their audience (cf. also Chafe 1994: 42–3). Slow pace allows writers to integrate multiple ideas into single linguistic units by means of linguistic devices such as nominalizations, participles, and conjoined phrases, among others (this creates 'maximum effect with fewest words', Tannen 1982a: 2). Conversely, spoken language is expected to be relatively fragmented; incidentally, this would be reflected by the additive style of traditional storytelling (cf. Rubin 1995: 66–70, see also Dover 1997: 70). Another

difference between speaking and writing is to be sought, according to Chafe (1982: 45–8), in the possibility for speakers to interact directly with their audience, which entails that writing should show a detached quality, whereas speaking should be characterized by linguistic features that manifest involvement (for instance, first-person references, emphatic particles, vague expressions, and so on). As Tannen (1982a: 17) remarks, 'involvement and integration are different orders of categories': the opposition between fragmentation and integration concerns the linguistic surface of discourse, while that between involvement and detachment reflects 'the writer's or speaker's stance toward the material and the audience'. This means that, theoretically, discourse may be involved and integrated, or fragmented and detached, at the same time. Such combinations of features were found to actually occur in both written and spoken discourse in an experimental study carried out by Tannen (1982a). This means that the oppositions between involvement and detachment and between integration and fragmentation may be conceived of as two independent dimensions on which types of discourse can be mapped (the integration–fragmentation dimension would be one of the axes in a bi-dimensional space, and the involvement–detachment dimension would be the other). These oppositions do not consistently separate written from spoken language in an unequivocal way; as is the case with syntactic complexity, other communicative factors and strategies play a prominent role.

Quantitative studies such as those of Douglas Biber paint an analogous picture. Biber applied advanced statistical methods (factor analysis, as described in Biber 2009)[4] to detect sets of co-occurring linguistic features in a number of registers in English (Biber 1988, 1989) and other languages (Biber 1995), based on large corpora of texts. The co-occurrence patterns that emerge from studies of this nature can be interpreted as linguistic manifestations of specific communicative functions.[5] These, in turn, may be more or less prominent across the registers of a given language. For instance, features such as first- and second-person pronouns, direct questions,

[4] For a clear and accessible explanation of this method consult Dancey and Reidy 2007: 456–92.

[5] With the important implication that registers are not identified by individual features taken in isolation ('register markers', cf. Willi 2010b: 298–300 on Classical Greek).

and imperatives have been found to be statistically related to each other: variation in the occurrence of one corresponds to variation in the occurrence of the others. This statistical relationship raises the hypothesis that these features are connected to a single underlying factor, whose interpretation is based on their shared communicative functions. In the case at hand, these point to the interactive engagement of the speaker with the audience. To give another example, the co-occurrence of high lexical variety and abundance of nouns, prepositions, and attributive adjectives may be regarded as a manifestation of the informational purpose of a register. Stretches of language in a given register may be characterized by such co-occurrence patterns to a small or large extent, as revealed by the sum of the frequencies of the co-occurring linguistic features. This sum may be taken as a score of a linguistic sample (which may include one or more texts or transcripts of spoken language, selected to represent a given register) for a given factor. Continuing with the former example, the sum of the frequencies of first- and second-person pronouns, direct questions, and imperatives corresponds to the 'interactiveness' score of a sample. As a consequence, texts and registers may be ranked by their score in a given factor, and each factor may be interpreted as a functional textual dimension of an analogous nature, such as those posited by Chafe (1982). Such dimensions are continuous (the scores of each sample may take any numerical value) and, theoretically, independent: registers whose score is similar for one dimension are not necessarily close to one another in a different dimension.

Both in his study of English and in his cross-linguistic research, Biber (1995: 238–42) found that no dimension may be interpreted as corresponding to modality in a one-to-one fashion; that is, no sets of co-occurring linguistic features consistently distinguish between written and ('literally') oral registers. On the other hand, each language has a number of dimensions at whose extremes one finds almost exclusively spoken or written registers, with a mixture of the two in the middle of the range. Dimensions which show this distribution normally relate to interactiveness (high: spoken registers, low: written registers), to the circumstances of linguistic production (real-time: spoken, planned: written), and to the degree of personal involvement (high: spoken, low: written). It is important to stress the direction of the association between modality and such dimensions. If a linguistic sample scores near the 'oral' or 'written end' of a dimension, the chances are that that sample represents a spoken or written register.

However, the opposite is not necessarily true; that is, not all spoken or written texts are expected to have extreme scores close to the respective ends of the relevant dimensions. In Korean, for example, the written register of personal letters consistently ranks closer to the oral end of almost all relevant dimensions than the spoken register of broadcast news (Biber 1995: 181–204). In English, these two registers have very close scores on two of the relevant dimensions and, in the other two, letters tend towards the spoken end anyway (Biber 1995: 146–67). This implies that, if we know that a text was oral, we may not simply assume that it should show the communicative properties expressed by the dimensions that isolate spoken and written registers at their ends. The association of extreme scores in certain dimensions with the oral or written medium depends precisely on the fact that the communicative priorities (manifested by the functional linguistic features that contribute to dimension scores) are best matched by the resources of either mode. A clear example is that of conversation, a quintessentially spoken register that consistently scores at the oral end of the relevant dimensions across languages (Biber 1995: 238):

> The communicative focus in conversation is typically on (inter)personal rather than informational concerns, and meaning can be clarified and jointly negotiated by participants. For these reasons, conversational interactions require fast, efficient communication, but they have relatively little need for a precise, dense packaging of information. These communicative priorities match the on-line production circumstances of the spoken mode; on-line production enables fast, easy communication, facilitating direct interaction among participants, but it is less well suited for highly informational or precise communication. (In contrast, writing would be slow and cumbersome for communication in face-to-face interactional situations.)

However, it is instructive to remark that the development of new media which allow written interaction in real time and with a high level of interpersonal involvement has led to the emergence of written linguistic varieties that show many of the features related to the oral mode (see for instance Crystal 2006 and Soffer 2010 on the 'silent orality' of instant messaging and SMS). As we have remarked, not all forms of oral communication constrain speakers in the same way and, we may add, the same applies to writing and writers.

These methodological and analytical results confirm the idea that the linguistic form of a text or utterance is not directly affected by the

medium as such, but by the communicative priorities of the speaker/writer and by the physical and cultural setting of linguistic communication, with its material and anthropological constraints and resources. Indeed, the very choice of medium is determined by these primary factors. When it comes to written literary texts, a study of their linguistic characterization as acts of oral communication should transcend the alleged dichotomy opposing written and spoken language. Rather, a fruitful approach will be based on the socio-cultural differentiation among oral communicative situations, which concerns both their physical setting and their cultural/anthropological aspects.

1.3 FROM COMPOSITION TO PERFORMANCE

The orality of Attic prose has been studied from a variety of angles which may be linked to the three perspectives on this question identified by Lord (1995). These perspectives correspond to different research questions and different levels of analysis of the form and content of a text. A 'philological' interpretation of orality bears a direct relationship to the identification of the 'oral style' of traditional storytelling and, as such, is concerned with linguistic expression. As we have seen, a 'literal' interpretation points in an analogous direction, in that it shifts the focus onto oral communication and opens up the possibility of assessing the formal features of a text in this connection. The 'philosophical' outlook, on the other hand, has to do with cultural and anthropological categories and is not directly concerned with language and style, even though the conceptual and structural features of a text may be brought into relation with the oral or literate 'mentality' that such approaches seek to identify. From a strictly linguistic point of view, the impact of literacy has only been documented to consist in the gradual extension of the range of linguistic varieties used by a speech community, with the emergence of new, written registers (Biber 1995: 360–2). Arguably, traces of this process are visible in the development of the Greek literary forms from the archaic period to the fifth century BC. If Homeric discourse may be interpreted as 'special speech' (Bakker 1997: 17)—a stylized spoken register—the style of Herodotus has been taken to represent an early stage in the development of written registers in classical Greek (Slings 2002). Quite significantly, spoken registers appear to remain

stable as a culture acquires literacy, which contradicts the idea that language is affected by an ostensible cognitive evolution from the 'oral mind' to the 'literate mind' (cf. Chafe and Tannen 1987: 392 and 3.2).

The three perspectives are not always clearly distinguished from one another in the scholarship on Attic prose. For example, Tarrant (1996) identifies as elements of orality in Plato's dialogues the imitation of conversation and spontaneous discourse (a feature of several spoken registers, which would be captured by a 'literal' interpretation of orality, as we have seen; cf. Slings 2002 on the language of Herodotus), as well as stylistic features that are reminiscent of traditional storytelling (repetition with variation, framing). Moreover, Tarrant (1996: 137) argues that Plato often attempts to construct a 'world of oral tradition' in which the reader should be immersed. This counts as a feature of orality in a 'philosophical' perspective, which may ultimately subsume the 'literal' and 'philological' approaches.[6] That is to say, if a text is recognized as 'philosophically' oral, the employment of formal features of oral registers and of traditional storytelling may be interpreted (rightly or wrongly) as reflecting the psychological or anthropological factors that may be attributed (rightly or wrongly) to the unavailability of writing—or to the ideological attitude towards writing and oral tradition—in a given culture (cf. Rossi 1992, Steiner 1994). From this point of view, features of oral registers would not be analysed in direct relation with the communicative setting envisaged for the text as a (prospective) act of oral communication—in this case, they would not be connected to the way in which Plato's dialogues were meant to be disseminated and received. Rather, they would be interpreted as alluding to oral communication by means of imitation and stylization, regardless of the actual mode of communication for which the text was composed (cf. Oesterreicher 1997: 212–14 on analogous phenomena in epic poetry).

Other studies adopt a fundamentally 'literalist' approach and examine prose texts primarily as records of, or aids for, oral communication. Gagarin, for instance, investigates the orality of Attic oratory by seeking to identify its 'oral style', which he defines as 'the style of a speech intended primarily for oral performance (whatever its mode of composition), as opposed to the "written style" of speeches intended for reading' (Gagarin 1999: 165). This 'literalist' outlook is reflected by the choice of features that should characterize such a

[6] Morrison (2004) adopts a very similar approach in his study of orality in Thucydides.

style. Some of them are directly connected to the optimization of a text for oral communication, as is the case with signposts, which 'help the audience follow [the] argument' (Gagarin 1999: 168), with parallelism and parataxis, which 'are certainly easier to follow' (Gagarin 1999: 169), with brief and simple antitheses, and, negatively, with 'extreme hyperbaton', which Gagarin (1999: 170) deems 'nearly incomprehensible' and unsuitable to the 'oral style' (cf. Yaginuma 1995 on Thucydides for a similar approach). Other features selected by Gagarin betray a 'philosophical' perspective on orality: for instance, he presents the negative attitude towards innovation as a feature of the 'oral style', claiming that 'oral cultures tend to preserve traditional ways of thinking as well as traditional forms of expression' (Gagarin 1999: 171). Likewise, a tendency to analyse and generalize arguments is ascribed to written communication (Gagarin 1999: 172–3). If Gagarin is right, these 'philosophical' elements contribute to the definition of the 'oral conception' of discourse in classical Athenian culture. A device like ring-composition, instead, is taken into account as a feature of oral style because of its prominence in oral poetry (Gagarin 1999: 168–9). As we mentioned, 'philologically' oral features characterize specific oral registers, such as those of traditional storytelling, where they serve specific communicative functions. However, they may come to be perceived as mere stylistic markers. As a consequence, they may be transposed to different genres, with different communicative conditions and priorities, and result in heavy stylization, which sets them far apart from their original communicative purpose. In this respect, ring-composition in traditional storytelling can be described as a framing device (a stylized form of repetition) that allows the speaker to look ahead and to wrap up narrative sections for the benefit of the audience's memory and attention (Bakker 1997: 115–21, Lang 1984: 5, cf. 24–5, and Slings 2002: 71–3 on Herodotus, cf. Kelly 1996: 156). In principle, however, highly complex and nested ring structures may transcend functionality in oral communication and could be better explained as extreme instances of stylization that would probably be lost on an audience that could not directly access the (written) text, as Worthington (1991a and 1996) points out.[7] These considerations suggest that 'philologically' oral features do not necessarily point to oral conception; in some cases, they may neither have an

[7] Worthington identifies such complex structures in the prose of Dinarchus, but his analysis has not been generally accepted; cf. MacDowell 1994: 270 and 2009: 8, Gagarin 1999: 163, n. 8, and Nicolai 2004: 19, n. 19.

optimizing function nor be culturally perceived as a marker of orality—perhaps, at most, they may be perceived to mark a specific genre.

The opposition between oral and written style described by Gagarin is not unproblematic. The idea that underlies this dichotomy is that some degree of linguistic variation between 'literally' oral and 'literally' written texts may be attributed to the medium. As we have seen, this hypothesis is not verified for oral and written registers in general—the medium alone does not consistently account for the differences between registers when different communicative situations that use the same medium place different constraints on language production, and when communicative priorities change widely across registers that use the same medium. An aprioristic distinction between an oral and a written style veers towards a 'philological' approach, where the oral style would be made to correspond to the features that would manifest an 'oral conception' based on stylistic resemblance with improvised, spontaneous talk (see 1.1 and Cooper 2004: 152), or with colloquial or conversational registers (e.g. Slings 1992, Duhoux 1997),[8] instead of traditional storytelling. The identification of the 'oral conception' of a text implies a disconnection from the medium, which ultimately clashes with the 'literalistic' distinction between types of speeches sketched by Gagarin. Admittedly, a dichotomy between an oral and a written style could be at least hypothesized if it were possible to compare registers that vary only as regards the physical channel of communication, with all other situational features being equal or at least controlled for (identity of participants, purposes and strategies, genre, and so on; cf. 2.1). But if we ask whether such a minimal opposition between registers is to be found in the extant corpus of Attic prose texts, the answer will be negative. On the one hand, all the texts we possess are medially written; on the other, they are all connected, in some way or the other, to listening as a primary mode of reception (as will be detailed in Chapter 3). As we will see shortly, the conceptional distinction between 'writtenness' and 'non-writtenness' in Athenian culture is by and large contained within the realm of oral performance (cf. O'Sullivan 1992: 43).

[8] Slings (1992: 101) affirms this explicitly: 'the dichotomy written/quasi-spoken depends on the internal structure of the texts (conversation versus continuous exposition or narrative), not on the way they were perceived externally'. Cf. Slings 2002: 76–7 on Herodotus' use of 'oral strategies as rhetorical devices'.

While a distinction between 'literally' oral and written texts does not hold for Attic prose, that between a written and a non-written conception appears very early in the development of ancient Greek stylistic theory. Alcidamas, to begin with, contrasts written composition with improvisation in his pamphlet *On Sophists*. As we have seen (in 1.1), writtenness is associated with lack of spontaneity (*Soph.* 12) and with precision (*akribeia*, *Soph.* 13, on which see O'Sullivan 1992: 44–9 and 4.1). These associations are purely conceptional, as shown by Alcidamas' remark that writers may imitate the style of extempore speakers (*Soph.* 13; cf. O'Sullivan 1992: 43), which he does not regard as 'precise' (*αἱ γὰρ ἀκρίβειαι τῆς τῶν ὀνομάτων ἐξεργασίας οὐ παραδέχονται τοὺς αὐτοματισμούς*, *Soph.* 25). Furthermore, Alcidamas mentions that written composition is instrumental to the preparation of epideictic speeches (*Soph.* 31). 'Pragmatic' contexts require that the orator be able to speak off the cuff, on the spur of the moment, reacting dynamically to the development of the forensic or political debate, whereas in epideictic contexts orators are expected to speak in the 'written' manner. We are still fully in the domain of 'literal' orality, and writtenness clearly does not refer to the intended mode of reception of the texts. Alcidamas makes the further point that the written style may be very impressive when 'contemplated from a book' (*ὁ γεγραμμένος λόγος* [. . .] *ἐκ βιβλίου μὲν θεωρούμενος ἔχει τινὰς ἐκπλήξεις*, *Soph.* 28)—this is generally interpreted as an allusion to relatively small public or private readings of *βιβλία* (cf. Mariß 2002: 273; see 2.3)—in spite of the intrinsically static nature of texts composed in writing. Such a nature is precisely the reason why written speeches fall short of the adaptability required by 'pragmatic' debates. In modern terms, Alcidamas insists on the 'desituatedness' of written texts: written language is produced separately from the circumstances of its reception, and as a consequence is not affected by such circumstances (Chafe 1994: 44–5, cf. Häcki Buhofer 2000: 254). This may remind us of Plato's observation that the written word fails to adapt to the audience (Pl. *Phdr.* 275e1–3, on which see Kahn 1996: 377), much as a writer may anticipate the readers' attitude, mindset, and familiarity with the topic, as well as be aware of the social environment in which written texts may be accessed (all of which amount to the author's 'rhetorical knowledge'; see Kellogg 1994: 37, 76–7). Desituatedness does not imply higher accuracy and lack of spontaneity, but promotes them; in this light, the ascription of such characters to the written conception of speeches is entirely straightforward.

An awareness of the desituatedness of the written medium is also exhibited by Isocrates. In the *Philip*, Isocrates remarks that speeches meant to be read (*λόγοι ἀναγιγνωσκόμενοι*, Isoc. 5.25) are perceived to be unsuitable for debates on current matters, unlike speeches meant to be delivered (*λόγοι λεγόμενοι*). This is because they may fail to be timely, which works to the detriment of their ability to persuade (*ἐπειδὰν γὰρ ὁ λόγος ἀποστερηθῇ* [. . .] *τῶν καιρῶν καὶ τῆς σπουδῆς τῆς περὶ τὴν πρᾶξιν* [. . .] *φαῦλος εἶναι δοκεῖ τοῖς ἀκούουσιν*, Isoc. 5.26). From this point of view, speeches that circulate in writing are desituated at a higher level from that envisaged by Alcidamas; namely, desituatedness is not just determined by the separation of composition from performance, but also by the fact that an excessive amount of time may intervene between the two. In addition, speeches for reading are meant to be read aloud (as indicated by *τοῖς ἀκούουσιν*, Isoc. 5.26), and may also fail to persuade because they are not necessarily delivered adequately by the reader. All paralinguistic elements, such as the correct use of the voice, are left for the reader to supply, and there is no guarantee that this would be done properly. The reader may lack the necessary skills (cf. Isoc. 15.189) or simply fail to convey the *ethos* constructed by the writer (*ἐπειδὰν γὰρ ὁ λόγος ἀποστερηθῇ τῆς τε δόξης τῆς τοῦ λέγοντος καὶ τῆς φωνῆς καὶ τῶν μεταβολῶν τῶν ἐν ταῖς ῥητορείαις γιγνομένων* [. . .] *ἀναγιγνώσκῃ δέ τις αὐτὸν ἀπιθάνως καὶ μηδὲν ἦθος ἐνσημαινόμενος ἀλλ᾽ ὥσπερ ἀπαριθμῶν, κτλ.*, Isoc. 5.26, cf. Wisse 1989: 63). This further diminishes the author's control on the reception of a text (cf. Svenbro 1993: 47). Writers of *λόγοι λεγόμενοι* know that the text will delivered on a specific occasion, either by themselves or by another speaker. Conversely, in the case of *λόγοι ἀναγιγνωσκόμενοι*, the occasion on which a speech will be received is potentially very distant and its situational characteristics relatively unpredictable; fully fledged oratorical delivery (*hypokrisis*), with the effective use of voice and gesture (on which see Hall 1995: 46–9, Bers 2009: 50–1), is a possibility (cf. Graff 2001: 24–5), but plain reading must also be envisaged by the writer.

In this perspective, the focus of the distinction between writtenness and non-writtenness appears to shift from composition to performance; more specifically, to the role of the written page in the context of the oral rendition of a text. Reading (*anagnosis*) is by definition characterized by the physical presence and visible use of written texts, whereas this is not necessarily the case with the oratorical

delivery of the *λόγοι λεγόμενοι*. Now, Aristotle (*Rh.* 1413b8–9) draws a distinction between the 'written style' (*γραφικὴ λέξις*) and the 'debating style' (*ἀγωνιστικὴ λέξις*).[9] The written style is especially suitable for *anagnosis* (*Rh.* 1414a18–19), while the debating style is intrinsically related to *hypokrisis*,[10] which is presented as an additional instrument of persuasion in decision-making contexts in a different section of the *Rhetoric* (*Rh.* 1386a33, cf. Isoc. 5.26 and 15.189 discussed above; see Fortenbaugh 1986). Aristotle explicitly connects *anagnosis*—without specifying whether he is thinking about solitary or group reading (cf. Allan 1980: 247)—with the epideictic genre. As we have seen, Alcidamas admits the use of written composition for speeches of this kind. Fifth-century epideictic 'lectures' are not necessarily to be conceived as actual readings, even though a written text may be used as an *aide-mémoire* and could be circulated (cf. Thomas 2000: 254–8, Thomas 2003: 168–70, 182–8, and 3.3.5) but, as Thomas (2003: 173) points out, 'Aristotle's definition belonged to a later, more text-oriented period', a period when the circulation of written copies of epideictic speeches was relatively wide and was often the primary dissemination channel of such texts (cf. Canfora 2011: 69 and 2014a: 81; see 3.4.3). Conversely, if we exclude documents read aloud by clerks,[11] written texts were 'invisible' in 'pragmatic' contexts—*anagnosis* is not conceivable as a type of oratorical performance before the tribunal or the Assembly (cf. Schloemann 2002: 137, Lavency 1964: 183–9, MacDowell 2009: 3, and 3.4.3). This indicates that Aristotle's notion of 'writtenness' has to do primarily with reception: the 'written' style qualifies as such because it especially characterizes texts that are meant to circulate in writing and to be read aloud (cf. Graff 2001: 21–2, Innes 2007: 152). As a matter of fact, Aristotle makes no obvious allusion to the role of writing in composition—there are no explicit indications that he connects the debating style to improvisation, as this would imply (cf. Sonkowsky 1959: 261; however, this connection may be lurking in the background, cf. O'Sullivan 1992: 46, n. 138). 'Debating' texts may exist in writing, but they look amateurish 'in the hands' (*ἐν ταῖς χερσίν*);

[9] See Hall 1995: 39 on assembly meetings and court cases as forms of *agon*.

[10] Aristotle describes *hypokrisis* at *Rh.* 1403b22–35, on which see Vatri 2016.

[11] These are not limited to laws, contracts, and other legal documents (cf. Gagarin 2008: 201), and may even include poetry (e.g. in D. 19.247 and Aeschin. 1.149, cf. Duncan 2006: 66 and Ford 1999: 252).

conversely, 'written' texts are ineffective in debates (*Rh.* 1413b14–16). On this point, Aristotle adds that asyndeton and repetition are at home in the debating style but are avoided in the written one, due to their 'dramatic' nature (*ἔστι γὰρ ὑποκριτικά*, *Rh.* 1413b21–2). Such a nature is manifested by the necessity to use varied and expressive intonation in delivery, which applies to both figures (*Rh.* 1413b22, 29–31; see Vatri 2016)—and, as we have seen, Isocrates hints at the fact that the proper use of the voice is not guaranteed when a speech is circulated in writing and read aloud. Aristotle describes the 'written' style as 'precise' (*akribes*). This quality was regarded as a sign of written composition by Alcidamas (*Soph.* 13 and 25), but it may well be interpreted as instrumental to the avoidance of ambiguities and misunderstandings in texts that were meant to circulate in writing and that are not able to explain or, as Plato puts it, defend themselves (*Phdr.* 276c, cf. Isoc. *Ep.* 1.3; see Kahn 1996: 377, Yunis 2003b: 207–8)—another element of desituatedness. Written circulation implied the impossibility for the author to rely on the extratextual paralinguistic and extralinguistic context, since prosody (in the absence of a fully developed punctuation system) and gesture are not directly recorded in the text (cf. Graff 2001: 26, Russell 1981: 136, Dufour and Wartelle 1973: 74, n. 1). The absence of such 'compensatory' devices (cf. O'Sullivan 1992: 47), in turn, entails the necessity to encode as much information as possible as co-text. The accurate expression of the meaning and its subtleties was more crucial, at least theoretically, than stylistic ornamentation (cf. Isoc. 5.27; see Bons 1993: 164, cf. Graff 2001: 26).

The presence of a written text as a primary medium of circulation in the physical setting of oral communication entails the theoretical possibility that both the speaker/reader and the audience make use of it in different ways. Classical scholars have often argued that complex and elaborate texts were meant for 'perusal at leisure' from a manuscript (Cole 1991: 74, cf. Crane 1996: 7) rather than textless public delivery. Perusal of a text involves the direct control of the flow of communication on the part of the audience, which enables the off-line interpretation of the linguistic message (cf. McGillivray and Vatri 2015: 112–13 and 4.3.1). This means that stretches of language may be evaluated in their entirety after they have been perceived sensorily in the on-line processes of reading or listening. Ambiguities and difficulties in the syntax or meaning may be identified, interpreted, and resolved, and awareness may be gained of the structural

properties of a text (these play a role in on-line comprehension, but may be less consciously identifiable, cf. Worthington 1991a: 62). The possibility for the speaker and/or the audience to have direct access to a manuscript in performance has a variety of implications on memory as well. Speakers, to begin with, may want to memorize a speech composed in writing, if they may not use a written copy in the context of delivery. Apart from this, and perhaps more importantly from the point of view of the ancient rhetoricians, public speakers ought to take care that the jurors in the tribunal or the members of the Assembly remember the main points of their speech. In Hellenistic times, the same concern emerges for authors of didactic literature (including historians) as well—ideally, readers or hearers should be able to memorize the facts and notions presented in such works, which they would be able to peruse (see Vatri 2015a).

The purpose of this book is to examine the 'literal' orality of Attic prose precisely in terms of the relationship between the linguistic form and the oral communicative situations distinguished by the function of the written text in performance and reception. When situations allow off-line perusal of the text, constraints on comprehension are lower; theoretically, this implies a reduced necessity for language to be optimal from the point of view of this cognitive process. Conversely, when a text is envisaged for a communicative situation in which the linguistic message may be accessed only under an on-line condition, this necessity may be higher—at least if a text is intended by the author to be understood and internalized by the audience in some measure (cf. Bruce et al. 1982: 133 and see already Theo *Prog.* 71.31–72.1 Patillon). Off-line perusal of demanding texts is facilitated, if not enabled,[12] by the availability of a written copy, and its identification with 'reading' (cf. Worthington 1991a: 63, Worthington 1996, Yaginuma 1995, Gagarin 1999, Denniston 1950: 15, Slings 1992: 100) is straightforward if one envisages reading as a solitary activity (Kelly 1996: 155). However, if one thinks of ancient *anagnosis* as a potentially collective activity involving at least one

[12] Admittedly, this activity could rely on memory, as a famous passage of Plato (*Prt.* 339a–47a, with Socrates and Protagoras performing a close reading of a poem of Simonides) seems to suggest. If realistic, this situation would probably not be ordinary (cf. Ford 2003: 36), and perhaps it would be facilitated by the nature of the text under discussion—a limited stretch of a metrical composition, which would be relatively easy to retain in, and quote from, memory (cf. Rubin 1995: 85–8, 108–14, Small 1997: 74–6, Devine and Stephens 1993).

reader and one listener, the mere availability of a manuscript does not automatically imply that listeners may directly control their own access to the text. Of course, it would have been possible for them to do so, as is explicitly hinted at by Isocrates (12.251), but this possibility depends on the cultural conventions associated with the social event (or communicative situation) of non-solitary reading (cf. Hudson-Williams 1949: 66). As a first step in this study, such conventions will be examined and compared to those of the other communicative situations in which texts were performed and received in fifth- and fourth-century Athens.

2

Contexts of Reception

2.1 TEXTS AND COMMUNICATION

'Text' is one of the most common terms in studies of both language and orality (and, admittedly, in the first chapter of this book). Just as is the case with orality itself, the notion of 'text' can be construed in several ways. In linguistics, 'texts' may be defined as oral or written 'verbal records of communicative events' (Brown and Yule 1983: 5–14). This definition, which is specific to discourse analysis, captures virtually all forms of linguistic transactions, from till receipts to lyric poetry. More narrowly, texts may be defined as stretches of language characterized by coherence and completion and serving a communicative purpose independent from the circumstances of their production (Wakker 2014). Sets of random unrelated sentences could count as texts by the broader definition, but would not be captured by the latter.

In classical scholarship, the notion of text is often equated with that of written record; correspondingly, textualization (defined as the conceptional transformation of speech into text) is viewed as a process that necessarily involves the fixation of language into writing (transcription), even though it transcends it (see Bakker 1997, especially at 209–10; cf. for instance Slings 2002, Alonge 2011, Ford 2003: 19 and 36, Morgan 2000: 24, and most essays in Bakker and Kahane 1997). Nagy (1996a: 40–3), instead, defines textualization as 'the process whereby each composition-in-performance becomes progressively less changeable in the course of diffusion'. This notion of textualization does not imply the manufacture of a written text (Nagy 1997: 177): speech may be fixated into a coherent 'text' well before it is physically transcribed (cf. Svenbro 1976: 43, Nagy 1998)—a well documented process for a number of oral traditions (cf. 1.1). On

this account, primary oral textualization should be distinguished from secondary written codification (Honko 2000: 6).

Finally, from an anthropological point of view, texts may be regarded as 'forms of language [...] which, whether written or oral, are accorded a kind of independent and privileged existence'. In other words, sequences of utterances are texts when they 'are constructed to be detachable from the flow of conversation, so that they can be repeated, quoted and commented upon' (both quotations from Barber 2007: 3). In this perspective, socio-cultural factors play a more crucial role than formal properties. A chunk of language must be recognized as an autonomous entity in order to qualify as a 'text', and such recognition may (but need not) be induced by the way or medium in which such linguistic material is presented (cf. Brown and Yule 1983: 199). Incidentally, the social perception of the 'textuality' of a set of utterances may conceivably be the condition that triggers the fixation of their form and structure—'textualization' in Nagy's sense.

All texts (from here on in an anthropological sense), like all uses of language—if we conceived of it as a semiotic system (Lyons 1977: 32, 57) that primarily serves as 'an instrument of social interaction' (Dik 1989: 5)—are acts of communication. Such acts are open-ended: they begin with the production of the text (written or oral composition, or composition in performance) and reach completion every time a text is received by hearers or readers. In this light, all instances of textual reception may be regarded as communicative events (or speech events), defined as 'culturally recognized social activities in which language plays a specific, and often rather specialized, role' (Levinson 1983: 279). In sociolinguistics, the context in which a speech event occurs is called a speech situation. For instance, a conversation (speech event) can take place during a party, on a bus, in an office, and so on (speech situations). Likewise, the text of a Greek tragedy may be accessed (speech event) in a classroom, in a theatre, on television, and so on (speech situations). Speech situations consist of several components, whose values define the situation itself in terms of context, form and content, and socio-cultural function. Components of speech acts have been variously identified in the linguistic literature. Biber (1988: 28–31), for instance, counts eight such components, namely 'participant roles and characteristics', 'relations among the participants', 'setting', 'topic', 'purpose', 'social evaluation', 'relations of participants to the text', and 'physical channel'. The influential model devised by Hymes

(1972, 1974: 54–62, cf. Duranti 1997: 290) distinguishes sixteen components instead:

1. message form;
2. message content;
3. setting: the time, place, and physical circumstances of a speech act;
4. scene: the 'psychological setting' (formal, informal, serious, festive, and so forth);
5. speaker (or sender): the person who physically produces the linguistic message;
6. addressor: the source of the linguistic message (for instance, the author of the text);
7. hearer (or receiver, or audience): the person, or persons, who perceives the linguistic message;
8. addressee: the person to whom the message is directed;
9. purposes-outcomes: what all the participants in the situation intend to accomplish by means of linguistic interaction, from a communal point of view (for instance, the outcome of a political speech is a decision in a political matter);
10. purposes-goals: what individual participants intend to accomplish (for instance, the goal of a political speech is that the decision proposed by the speaker should be made);
11. key: the tone (serious, ironic, etc.), which may be expressed paralinguistically or non-linguistically;
12. channel: the medium of transmission (oral, written, etc.);
13. forms of speech: the linguistic variety (language, dialect, register, etc.);
14. norms of interaction: the social rules that govern communication in the specific socio-cultural context;
15. norms of interpretation: the cultural customs and conventions that govern the interpretation of the linguistic message on the part of members of the community, given the interactional norms of the specific situation;
16. genre: set of traditionally recognized formal characteristics ascribed to the message type, in which the message is expected to share.

Components may change with every speech act within a single speech event. For instance, within the same conversation (speech event), different speech acts might have a different key—some might be ironic, others serious. If more than two people are involved in the conversation, the roles of the participants (speaker, addressee, and hearer) will rotate with every turn. The register might change according to the topic, as might even the language. On the other hand, certain components may remain the same throughout a speech event. Let us illustrate this through a brief synoptic analysis of the first four speech acts in Plato's *Phaedrus* (227a, Table 2.1). Certain components (3, 4, 11, 12, 13, 14, 15, 16) remain constant throughout this exchange, and are proper to the conversation as a speech event rather than to the individual turns. If we identify the same components in all speech events of the same type, we can proceed to higher levels of generalization. For instance, we might find that certain components of weather forecasts (speech events) on television (speech situation) are constant, at least at a general level. This would allow us to conclude that those components are inherent to television weather forecasts. Analogously, going back to classical Athens, we can observe that all prosecution speeches share a number of components (the speaker is a prosecutor, whose goal is the conviction of the defendant) that identify them as a type of speech event that is clearly distinguished from defence speeches (where the speaker is a defendant, whose goal is his own acquittal). Nevertheless, the speech event types 'prosecution speech' and 'defence speech' have a high number of situational components in common. Speeches of both types are held in public spaces or buildings, often outdoors,[1] before a jury consisting of 201 to 401 members in private suits, 501 in public prosecutions, and up to 1501 for important political suits (Hansen 1991: 389), plus numerous spectators (see Lanni 1997, Mirhady and Schwarz 2011). The addressee is always the jury, and hearers include the spectators.

[1] Homicide courts, such as that of the Areopagus or the Delphinion, gathered in the open air (cf. Arist. *Ath.* 57.4) to avoid *miasma* (Boegehold 1995a: 43–8). Folk etymology connected *ἡλιαία* with *ἥλιος* (cf. Ar. *V.* 772); it is questionable whether this is an indication that the *heliaia* met in unroofed spaces (as alleged in the scholiastic literature, references at Boegehold 1995a: 12). Cases could definitely be heard indoors (e.g. in the Odeion of Pericles, Boegehold 1995a: 6), in partially roofed buildings (peristyles), around which bystanders could gather (Boegehold 1995a: 16), or, apparently, in outdoor areas equipped with seating implements and fenced off on the occasion (as, perhaps, the poros benches in the Agora, Boegehold 1995b: 95).

Table 2.1. Speech act component analysis of Pl. *Phdr*. 227a1–2

1. Form	*ὦ φίλε Φαῖδρε*	*ποῖ δὴ καὶ πόθεν;*	*παρὰ Λυσίου*	*ὦ Σώκρατες*
2. Content	–	the Speaker does not know whence the Addressee comes and whither he is going and wants to learn about it	from Lysias	–
3. Setting	country road outside Athens			
4. Scene	informal			
5. Speaker	Socrates		Phaedrus	
6. Addressor	Socrates		Phaedrus	
7. Hearer	Phaedrus		Socrates	
8. Addressee	Phaedrus		Socrates	
9. Outcomes	establishment of communication	exchange of information		consolidation of communication channel
10. Goals	gain attention	learn about Addressee's activity	inform about Speaker's activity	emphasize orientation to the Addressee
11. Key	friendly			
12. Channel	spoken			
13. Form of speech	late 5th-cent. Attic, informal educated adult register			
14. Norms of interaction	late 5th-cent. Athenian (free) citizen politeness			
15. Norms of interpretation	late 5th-cent. Athenian (free) citizen politeness			
16. Genre	casual conversation			

The outcome of the social activity of delivering and listening to the speeches remains constant (obtaining a verdict), as does the channel of communication (oral). The form of speech could generally be described as formal adult registers of fourth-century Attic. The norms of interaction are, in both cases, those dictated by the Athenian legal procedure and by the social conventions associated with the audience's participation (see 2.3). The norms of interpretation will place an added value on spontaneity and honesty in both prosecution and defence speeches.[2] These shared components may be taken as the defining features of the speech event type 'forensic speech before an Athenian tribunal'.

2.2 READING

Sets of situational components that are sufficient to distinguish a type of speech event from others could form the basis of a taxonomy of speech event types in a given society. These, of course, encompass the activities in which texts are received. When texts circulate in a written form, such activities include reading. Public reading and group oral reading may be constructed as speech events and described in their situational components in a rather straightforward fashion. In collective *anagnosis*, the reader of the text is a sender, in that he acts as a purely instrumental 'spokesman who repeats the source's words' (Hymes 1974: 56, cf. Svenbro 1993: 46) through the spoken channel to a receiver (the audience, whatever its size). A similar configuration may be envisaged for rhapsodic performances—which Bakker (1998: 63) describes as 'staged speech acts'—with a major difference resulting from the presence and use of a written text. In such situations, the receiver may or may not coincide with the addressee, as is the case with invocations or a prayers in religious rituals, with the speaker addressing a deity in front of an audience of hearers, possibly repeating a (written or oral) text composed by a different addressor from him/herself. Solitary reading might also be interpreted and describe in

[2] At this level of analysis certain fine-grained distinctions are necessarily obliterated (e.g. a speaker may sometimes address a specific person, a law-reader, or a witness, and different speech acts may have their own outcomes and goals). Distinctions among different levels of analysis (speech event or speech act) should remain clear.

this framework. This activity was not too common in classical Athens (see 3.2). Nevertheless, allusions to it are found in Aristophanes (*Ra.* 52–3), Plato (*Phdr.* 228b, *Tht.* 152a, *Phd.* 98b), in the Aristotelian *Problems* (18.1 916b2–4; cf. Allan 1980: 244, Knox 1985: 9, and Thomas 1992: 13), and in a number of other sources which seem to hint at silent reading (Gavrilov 1997: 70–1).[3] Arguably, oral reading to oneself can be analysed as a speech event in which the sender and the receiver are the same person—just as 'in speaking to oneself one plays the roles of both S[peaker] and A[ddressee] at the same time' (Dik 1989: 5). The same reasoning can be applied to silent reading, as experimental psychology suggests. To begin with, listening and reading share a common auditory basis (Kadota 1987: 196; cf. Shillcock 2007: 95–6, Frazier et al. 2006: 247, and Clifton 2015 for a review).[4] In reading, words are recognized both as units of meaning and as graphic signs encoding phonological information (see Vatri 2012 for a detailed account of these processes). The phonological information is then recoded in the reader's mind and used for the prosodic representation of sentences, which is concomitant with syntax processing (Stolterfoht et al. 2007, cf. 4.4.1). Phonological recoding may or may not be assisted by sub-vocal activity (that is, the activation of the neurological system involved in planning the motion of the muscles involved in speaking; see Gathercole 2008: 34–5) and the muscular activity in the articulatory organs which are linked to 'inner speech' (Sokolov 1972: 211, Taylor and Taylor 1983: 210–11). When isolated words are recognized, sub-vocalization does not happen. Even then, however, it is substantial for prosodic representation, once the meaning of the words has been accessed (post-lexical

[3] Whether ancient reading was predominantly oral or silent is a long-debated problem (see Werner 2009: 337 and McCutcheon 2015) that appeared to have been settled by Knox (1968), who concluded that silent reading was possible and not even unusual in antiquity. Starting from the 1980s, the medievalist Paul Saenger has argued that ancient readers were not physiologically able to read silently in the same way as modern Western readers do (see most recently Saenger 2000). An updated reassessment of this idea (Vatri 2012), however, shows that this claim does not stand up to scrutiny: from a physiological and cognitive point of view, the ancients might well have developed silent reading.

[4] As Lauro et al. (2010) suggest, syntactic comprehension activates the 'phonological loop' component of working memory: spoken language, or printed representations of spoken language (both alphabetic and pictographic), can be stored in short-term memory as phonological representations as long as they are rehearsed sub-vocally; see Gathercole 2008: 34–5. See Hirotani et al. 2006 and Kentner 2012 for a survey of recent studies.

stage, Slowiaczek and Clifton 1980, cf. de Jong et al. 2009, and Kadota 1987: 188). In short, since the text is 'performed' to oneself in one's mind, reading silently a Greek tragedy in one's own armchair can be described as a speech event occurring in a speech situation. Solitary reading, as a speech event, is characterized by the coincidence of the sender and the receiver, and by the use of what we may call the 'vocal' channel, meant to indicate both the fully oral and the sub-vocal performance of the linguistic message.

2.3 PUBLIC AND PRIVATE SITUATIONS

Speech events in which texts were received in classical Athens encompass a relatively wide range of socially recognized activities. A summary list would include civic/religious festivals, where performances of epic and choral poetry took place, theatre (by which I mean the socio-cultural context of dramatic performance, not simply the physical space), public ceremonies (such as 'state' funerals), the Assembly and the tribunal (once again, not to be intended as simply the physical spaces), and the symposium. Another typical context we are informed about is that of private collective reading, which is depicted or alluded to in a number of fourth-century sources (see Kelly 1996).[5]

At the beginning of Plato's *Theaetetus* (142a–3c), Eucleides and Terpsion are taking a rest at the former's house in Megara. Eucleides mentions some notes he took of a conversation which Theaetetus had with Socrates some years before, and Terpsion suggests that they should read them (*διελθεῖν*). Eucleides agrees and says that the slave will read to them as they rest (*ἡμῖν ἅμα ἀναπαυομένοις ὁ παῖς ἀναγνώσεται*). He then hands the book to the slave, who starts reading. In the *Parmenides* (127c–d) Antiphon recalls that one of Zeno's friends, Pythodorus, told him that Parmenides and Zeno once went to the Great Panathenaea. They lodged in a house outside the city walls, and Socrates, among others, went there in order to hear Zeno's writings (*ἀκοῦσαι τῶν τοῦ Ζήνωνος γραμμάτων*), which Zeno himself read to them (*ἀναγιγνώσκειν οὖν αὐτοῖς τὸν Ζήνωνα αὐτόν*).

[5] Hellenistic sources are listed in Allan 1980: 248 and Schenkeveld 1992. See also Hutchinson 2008: 38–9.

Interestingly, we are told that after hearing them, Socrates asked Zeno to read one of his theses again and then started a discussion.[6] The opening scene of the *Phaedrus* is also a valuable source. At the very beginning, Phaedrus tells Socrates that he went to see Lysias at Epicrates' house. There, the conversation was prompted by a speech of Lysias on love. We are not told whether Lysias read the speech aloud or recited it. A written copy, however, was there, as Socrates guesses that Phaedrus borrowed it and ended up memorizing the speech. He also guesses that Phaedrus often asked Lysias to repeat the speech to him, and that Lysias would do so willingly (227a–8b). This matches the norms of interaction that we can infer from the episode described in the *Parmenides*. Further on in the dialogue, Socrates realizes that Phaedrus has a written copy of the speech on him. Socrates asks Phaedrus to read it for him. They look for a place to sit—they are in the countryside near the Ilissus—and when they spot one, Socrates lies down, and Phaedrus starts reading (230e). Another reference to collective reading is found in Xenophon's *Memorabilia* (1.6.14), where Socrates tells Antiphon that he goes through (*διέρχομαι*) the treasures of the wise men of the past, which they committed to books, together with his friends. Outside the Socratic environment, Isocrates (12.233) says that he tested his speech on his former disciples in a collective reading—it is not specified who the reader was (*ἀνέγνωστο δ' ὁ λόγος*)—and received immediate feedback.

The speech events described in these passages have some features in common. The setting is normally in-house—a secluded place where a selected group gathers (cf. Kelly 1996: 150). The channel is always oral. The addressor is always a writer; the sender, in turn, can be the writer himself (like Zeno), an ad hoc reader (like Phaedrus), or a slave.[7] The receiver could be an individual hearer, or a small group of people, who would not hold a written copy of the text (cf. Pownall 2007: 246). The conditions of access to a text, however, are not too different from those of solitary reading. As Pugh (1975: 112) observes, '[the reader] is not [. . .] directed exclusively by the author; he is able rather to decide for himself, in the light of his purposes and priorities, how to treat what an author has to offer' and can process the text at

[6] Similarly, in the *Phaedo* (97c–d), Socrates recounts hearing a reading of a book of Anaxagoras, without giving a detailed account of the situation—at least, not explicitly; cf. Allan 1980: 249.

[7] Perhaps not yet a specialized *anagnostes*, Allan 1980: 247–8.

his or her own speed (cf. Slings 1992: 100, Slings 1997: 169). This allows the off-line perusal of a text, described in the Chapter 1 (1.1) as a condition that lifts some of the constraints on comprehension entailed by the on-line reception of a linguistic input. The norms of interaction that emerge from the ancient descriptions of group reading entail a similar way of receiving the text. Listeners could interrupt the sender, ask him to repeat, and engage him in a discussion (cf. Morrison 2004: 112–13, Usener 2003: 21–2); all of this makes for a rather interactive communicative situation (Biber 1988: 40) which allows for an off-line stage in the reception of the text.

This does not apply to other typical speech events involving textual communication set in public contexts in classical Athens. Drama—probably the literary genre that reached the largest audience, if we take into account both the attendance and the frequency of dramatic performances—is a case in point. The attendance of single performance at the City (or Great) Dionysia is estimated to have been between 14,000 and 17,000 people (Goldhill 1997: 57–8, Csapo and Slater 1995: 286), even though a recent reassessment of the evidence reduces this figure to 5000 or 6000 (Meineck 2012). This large audience was 'anything but passive in expressing approval and disapproval', and would react to the dramatic performance, which included 'shouting, hissing (or whistling), clucking, heel banging, and food throwing'. This could result in the actors and chorus abandoning the performance (Csapo and Slater 1995: 290, with a collection of primary sources). In spite of this, the flow of communication was not controllable by the audience: the text had to be received and comprehended on-line (if at all).

If we focus on the contexts in which prose texts were received, we can observe that the same scenario may be envisaged for major public performances of epideictic speeches. These took place in the open air (cf. Th. 2.34) at civic and Panhellenic festivals—virtually the same contexts as rhapsodic and choral performances (cf. 3.3.1 and 3.3.3)—or during ceremonies such as public funerals (see Carey 2007: 238–40, Walker 2000: 7–8). Public *epideixeis* would certainly elicit some feedback (Isoc. 12.233) but, once again, the flow of communication was completely under the speaker's control. This was seemingly the case with smaller-scale formal or less formal *epideixeis* (in the literal sense of 'demonstrations' of a *techne*; see Thomas 2003: 174) as well, such as those given by the sophists (on which see Thomas 2000: 250–7 and Thomas 2003: 177–9). Protagoras, as Plato describes him, was much

more comfortable speaking at length (and being cheered at as he finished, Pl. *Prt.* 329c7) or engaging in well-regulated verbal contests (*antilogiai*; see Benitez 1992: 244)[8] than being interrupted and involved in free question and answer (*Prt.* 329b, 334c7–335c7, 336b7–d5). Likewise, in the *Lesser Hippias* (364b), Socrates confesses that he did not dare to interrupt Hippias to ask him questions during his *epideixis*. Interestingly, Socrates adduces the size of the audience in order to justify his behaviour: it would be awkward to interrupt an in-house epideictic performance before a relatively large audience, but a smaller gathering makes questioning the speaker possible. On the other hand, performers of 'uninterruptible' set pieces would not ignore the (silent) reactions of their audiences, if we trust Aristotle's report (*Rh.* 1415b15–17) that Prodicus would throw in elements of the 'premium' version of his talk (cf. Pl. *Cra.* 384b) if he noticed that he was losing his audience.

As Hall (1995) underlines, the communicative setting of 'pragmatic' speeches has much in common with that of drama (cf. also Ober and Strauss 1992: 238). As we have seen, forensic speeches were delivered before up to 1501 jurors plus numerous bystanders in a public space. Deliberative speeches were delivered in the open air on the Pnyx, before an average of 6000 people (Hansen 1991: 130–2). Such large crowds could and would react noisily to what the speaker said and, in contrast to what would happen in the theatre, could force him to adapt his strategy to the circumstances (cf. Bers 1985, Hansen 1991: 146, Hall 1995: 43–4, Thomas 2011, Worthington 1991a: 63). Communication, however, was still a one-way process, and the speaker would still be in control of its flow; as Hansen (1991: 146) remarks, in such large gatherings 'it is impossible to have a proper exchange of views in the form of a discussion', and the audience could access the text only in an on-line mode. Readings performed by clerks in these contexts (see 1.3) share some communicative features with private group reading. In Demosthenes' speech *Against Lacritus*, the speaker asks for a reading of a contract (D. 35.10–13), which he then examines provision by provision (18–28), eventually asking for a second reading (37). It would appear that the orator stages his own off-line elaboration on the text in front of an audience (we may also mention Aeschines' commentary and comparative discussion of passages of poetry at 1.149–53; see Ford 1999). Arguably, the

[8] Gagarin (2002: 22) insists on the disconnection between written *antilogiai* and the speeches that were delivered in such contests.

construction of arguments based on oratorical narrative (construed as a text in its own right) may be interpreted in the same way. As documents are read, the orator delegates his role of sender of the linguistic message to the clerk and steps into the role of hearer. The audience remains an addressee that still receives the message in an on-line condition, and the speaker enters an ambiguous position of 'logical' sender-hearer.

To sum up, this ethnographic impression of the communicative situations in which prose texts were received in classical Athens indicates that we may distinguish between situations that allowed the off-line perusal of the text and situations whose norms of interaction excluded this possibility. The former include solitary and private group reading, whereas the latter include public oratorical performances and semi-formal small-scale *epideixeis*. In the rest of this study, we shall refer to the former as private situations, and to the latter as public situations.

In general, public situations were high-pressure ones. Epideictic oratory, to begin with, was intrinsically competitive in several respects (cf. Roisman 2007). Not only did speakers indirectly compete with one another, trying to promote themselves through their speeches for the sake of financial profit (*ergolabia*, Isoc. 5.25); they would also be automatically measured up against both the subject of their speech and their predecessors (Carey 2007: 239–40). Stakes were even higher in 'pragmatic' contexts: political speakers risked their reputation, influence, and career; prosecutors risked their own and their family's satisfaction and honour; defendants risked their property, political rights, and even life. Adding to the intrinsic stress engendered by the nature of political and forensic decision-making, speeches had to be delivered from memory or improvised on the spot within precise time limits (see 3.4.3) in front of a large and badly behaved audience whose reactions could altogether block the channel of communication. The impossibility for the audience to re-access the text in an off-line mode made it almost mandatory for public orators to speak as clearly as possible (Sluiter 2016: 46) and to excogitate techniques aimed at promoting the persistence of the most important arguments in the listeners' memory (cf. Vatri 2015a). Unsurprisingly, clarity (*sapheneia*) is presented by Aristotle as an essential component of the 'virtue of diction' (*arete lexeos*, on which see Innes 1985: 255)—one in whose absence language will not be able to perform its function and will be a complete failure (*Rh.* 1404b1–3)—and, as we

shall see (4.1), a constant preoccupation throughout the ancient Greek rhetorical tradition. If private and 'non-pragmatic' texts could afford obscurity of expression, this would be counterproductive in 'pragmatic' public speaking.[9] In this perspective, the situational dichotomy between different contexts of reception may have a linguistic correlate: where off-line perusal is possible, there is no need to take excessive pains to ensure the optimal on-line comprehension of a text. In Slings' words (1992: 100), 'one can, after all, read a sentence through in one's own tempo, so a slightly more complicated syntactic structure is much less of a problem'. As Slings underlines in the same article, when optimization for on-line comprehension matters, speakers may even push their expression to the limits of 'grammaticality'. Failure of optimization for private texts has been postulated before by a number of classical scholars, albeit in different and more basic terms—one often reads that texts for readers can be more difficult than texts for hearers, which would imply that if a text turns out to be difficult, it was probably meant for an audience of readers (see for instance Yaginuma 1995, Gagarin 1999, Denniston 1950: 15, and Kelly 1996). As we shall see (4.1), this observation is well grounded from both a rhetorical and a linguistic point of view, but it raises first of all a methodological question: how are we to assess the linguistic difficulty of an ancient text for a native speaker of classical Greek? At the same time, it poses a question to be addressed analytically: is it true that public texts are optimized for on-line comprehension from the point of view of their linguistic presentation, whereas private texts may, but need not (cf. Yunis 2003b: 189), be difficult? Before we can proceed to address these questions it is necessary to assess the status of the written Attic prose texts that we possess—and that will serve as material for linguistic analysis—in relation to the communicative situations outlined in this chapter.

[9] On a related note, one can compare the account of choral poetry given by Rossi (1983: 10). He argues that the obscurity of Pindaric odes is an indication of the fact that the poet regarded the commissioner as the only addressee, in that the *laudandus* and his circle were the only persons who could access the text without the communication noise connatural to choral performance (with the distracting elements of music and dance) and its public setting. This would be precluded for the audience of such performances—mere hearers who were only meant to enjoy the show. Rossi's methodology for the assessment of obscurity is based on the linguistic analysis of hyperbata, and is described in an unpublished typescript (Rossi 1978, mentioned at Rossi 1983: 11, n. 1).

3

The Writing of Attic Prose

3.1 FROM COMPOSITION TO RECEPTION

The written texts that transmit Attic prose relate to the communicative situations that characterized the socio-cultural context of classical Athens in a number of ways. Some are directly connected to texts that were performed orally, in that they may be 'transcripts' of oral texts or they may have been conceived as 'scripts' to achieve oral performance. Others, instead, may have been conceived in the first place as 'scriptures', that is, as written texts that are received *qua* written texts and that 'need not even presuppose performance' (Nagy 1996b: 112).[1] Written texts that qualify as transcripts will have been performed orally in the first place. The written medium records the linguistic message conveyed in performance in a 'format that is quite alien to the message as such' (Bakker 1997: 30)—in other words, the message is transcoded (Oesterreicher 1997: 195–6), much in the same way as a musical piece is encoded and stored as a digital file. A transcript is not equivalent to a performance, but it may be 'played back', as it were. When performance is recreated from a written transcript, that transcript is used as a 'script'.

Scripts may be compared to musical scores. Musicians might read from a score or play by heart: the written codification of music might be instrumental, but is not substantial to performance (and certainly cannot replace it; cf. Finnegan 1988: 128). A script, that is, may be physically present or absent from the visual scene—it may simply be learnt by heart (or hidden, as is the case with autocues in modern TV news, Schloemann 2002: 133–4)—and its existence as a written text is

[1] On the notions of transcript, script, and scripture see also Nagy 1992: 41–5, Nagy 1996a: 66–9, Nagy 1998: 79.

merely ancillary to performance. As we have seen (2.3), Athenian public situations would privilege the invisibility of the script, if any existed. A script, of course, need not originate as a transcript but may be the product of written composition—which one may interpret as direct transcoding from the 'mental' to the graphic medium (cf. Bakker 1998: 59), without the mediation of a phonic stage. Scripts, finally, may be altered in performance in cultural contexts where improvisation is permitted; in other words, for certain genres there is no guarantee that the written words of a script correspond exactly to those that were pronounced in oral performance (cf. Cole 1991: 117–18, Trevett 1996b: 439; see 3.4.3 on oratory).

Written texts, be they transcripts or written compositions, may also be conceived or used as 'scriptures', that is, as fixed texts whose *raison d'être* is not performance but the transmission of the textual message. Scriptures may be actualized orally (as was the case with ancient group *anagnosis*, cf. 1.3, 2.3) and, if one stretches the concept, even solitary (oral or silent) reading may be thought of as a form of performance (cf. 2.1, Finnegan 1979: 21). This indicates that the distinction between scripts and scriptures does not rest on the 'performability' of the written text—which, arguably, is a property inherent to all texts—but on the type of reception of which the text is the object. A text performed from memory or read out in a public situation (defined in 2.3 as a socio-cultural context which disallowed off-line perusal) is used and perceived as a script—a text that is only actualized (and, in this sense, only exists) in its on-line reception. Incidentally, all the linguistic material produced during the performance of the script (repetitions, self-corrections, fillers, false starts, and the like) becomes part of the perceived text, which is only based on the script but need not correspond to it. Conversely, the private, off-line perusal of a written text coincides with its use as a scripture: the text exists because it is written and in the form in which it is written, independently of its on-line actualization.

The use of a written text as a script or a scripture may be envisaged by the author (or publisher—the two need not coincide, cf. van Groningen 1963: 8–10 and 3.4.3) as he writes down and circulates his work, but such use ultimately depends on the readers (cf. Nagy 1996b: 170, n. 66). These, in turn, may be constrained to approach a written text as a script or a scripture by the specific socio-cultural contexts in which they access it; an actor, for instance, uses the text of a play as a script when performing but, arguably, as a scripture (at

least to some extent) as he or she first reads and memorizes it—he or she is the receiver of the message while training to be the sender. Moreover, texts that are first written down and circulated as scripts may be primarily used as scriptures in different periods (as would be the case with our reading of Homer or Greek melic poetry).

The identification of the prevailing use of written Attic prose texts in the original context of their dissemination is a fundamental step to take for the assessment of their relationship to oral performance and of the circumstances of their reception. Even though the initial stages of the written fixation of literary texts corresponded to the exploitation of writing first as an aid for composition, and, by the fifth century, as a medium for the transmission of scripts (cf. Pfeiffer 1968: 25–6), virtually all of the extant classical texts came to be treated as scriptures at some point in history. Cultural changes led to the decline of social customs that provided the occasions for performing certain literary genres, if we exclude 'revival' performances, but the 'scripturification' of texts initially composed as scripts could have taken place at a very early stage, with or without the consent of the author, along with the disconnection between genres and their occasions (Rossi 1992: 97). In this connection, the written texts that we possess may theoretically be related to oral performance in a multitude of ways, as the diagram below indicates (Figure 3.1, where 'public' and 'private' are used as described in 2.3).

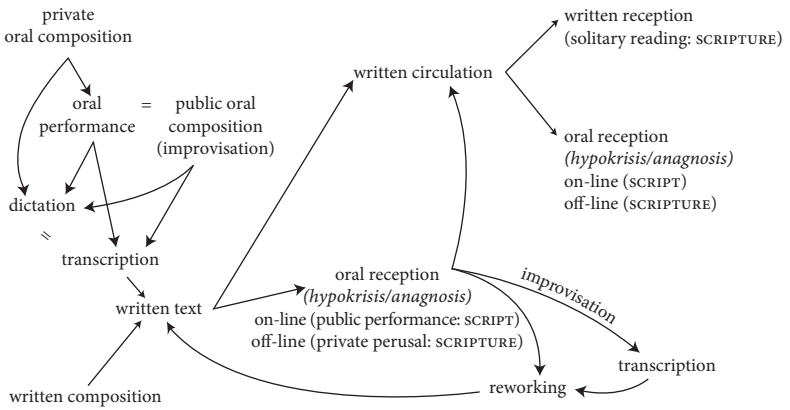

Figure 3.1. Possible paths in the history of written texts available in fourth-century Athens.

Texts may have been either composed orally (privately or by improvising in performance) and subsequently transcribed, or composed directly in writing. Transcription could avail itself of dictation, which may attempt to reproduce an orally performed text (cf. for instance Isoc. 12.231; see Thomas 1992: 50–1, Bakker 1997: 20–7, and Janko 1998 on oral poetry), but which, theoretically, may simply represent an expedient way for an author to record the initial draft of a text to be properly elaborated in writing prior to any form of publication or performance. In general, a distinction may be drawn between public and private composition (cf. Allen 1973: 13–14 and 1.1), the former consisting of improvisation alone (composition-in-performance), and the latter encompassing 'mental' (oral) composition, dictation, and written composition. Analogously to private situations of reception, private composition would enjoy the advantages of off-line access to the text. The written texts produced by either means would be intended as either scripts (for performance or reperformance in a public situation) or scriptures (for private perusal). In theory, scriptures could be either presented orally before dissemination or circulated directly. Scripts, in turn, could be republished as written texts after public performance. The intermediate oral stages that precede the written dissemination of a text potentially involve oral composition.

An interesting testimony of these processes and their complexity is offered by Isocrates in the *Panathenaicus*, where he gives an account of the composition and revision of the first part of the speech. He composed it in writing, corrected it with a handful of young pupils, and then had it read by an ex-student of his—private reading of a scripture (Isoc. 12.200–1). The ex-student's feedback prompts Isocrates to react with a long tirade (204–14), and so does the subsequent response (215–17), to which Isocrates replies at length—an instance of composition-in-performance (219–28). Isocrates dictates his tirades—oral (re-)composition—and goes through them again a few days after—private reading (231). Torn between discarding and saving them, he resolves to try them out on an audience of former disciples by reading them aloud (233)—an in-house 'public' *epideixis* (cf. 3.4.3). The picture that this narrative paints[2] is one of an 'open model of textuality', in which performances are 'incorporated through revision and supplementation into subsequent versions' (Collins 2012: 175), a

[2] On the question of its verisimilitude see Nicolai 2004: 136–7.

similar scenario to that depicted by Lang (1984: 69) as regards the composition of Herodotus' *Histories*.

Texts that were composed or simply drafted as scripts could be revised after performance. A number of sources (e.g. Ar. *Nu*. 522–5, see Csapo and Slater 1995: 4–5) attest this practice (*diaskeue*) for dramatists (especially comedians); plays could be altered by the composition of new material for the purpose of reperformance (see Marshall 2012, Zimmermann 1991: 4), which may or may not have taken place (cf. Revermann 2006: 327–32). Scripts that were composed for a one-off specific occasion (such as forensic or deliberative speeches) and only circulated in writing after they were delivered could also be revised, and we can envisage a pre-performance and a post-performance stage in their history. Post-performance revision could involve the incorporation in the text of improvised material, and its purpose could be the publication of a new version of the text through written dissemination. This, however, need not always be the case. A writer could have decided to preserve the alterations made to the text during performance and add them to the written script, which he would keep, if not for merely archival purposes, as study material to work on,[3] without necessarily having considered publication. Authorial second editions have been hypothesized for a number of fourth-century prose texts, including some that were meant for written circulation rather than oral delivery in the first place (see Pinto 2003: 157–60 for an extensive list). The existence of second editions has been inferred either on the grounds of anecdotal evidence or based on alleged authorial variants in the manuscript tradition. In principle, however, we should not expect multiple 'official' authorial versions of a text or a passage to have survived through the 'bottlenecks of tradition', as Nicolai (2004: 168) underlines. Moreover, as Ademollo (2011: 492, n. 5) remarks, 'author's variants need not derive from a revised *edition* of the work in question [. . .] in principle, they may just derive from the author's unpublished drafts'.

A most interesting case to illustrate such problems is that of Demosthenes' *Third Philippic*. The text of this speech is preserved by all of the four main manuscripts that transmit the works of Demosthenes (F = Marcianus 416, 10th cent., A = Monacensis 485, 10th or 11th cent.,

[3] Cf. MacDowell 2009: 8 *contra* Wooten 2008: 170, n. 6. If we are to believe anecdotal evidence, Plutarch (*Dem*. 8.2) reports that Demosthenes used to work on his opponents' speeches (as well as his own) after hearing them.

Y = Parisinus 2935, 10th or 11th cent., S = Parisinus 2934, 9th or 10th cent.). S is generally regarded as the most authoritative of these manuscripts (it should be noted that the others do not derive from it; see Pasquali 1952: 270–3, Sealey 1993: 222–3, Wooten 2008: 167, De Robertis 2015: 29–42), but in several places it omits parts of the text of the speech. The omitted passages, which range from single words to several lines, were added in the margins by later hands. The authenticity of these passages is well established, even though doubts have been raised in the past (cf. Sealey 1993: 234–5, Wooten 2008: 171–3); on the other hand, the text flows well both with and without them (cf. Pasquali 1952: 273). Papyri and quotations show that both the long and the short version of the speech were already in circulation by the second century AD (see Pasquali 1952: 282 and De Robertis 2015: 230–4),[4] and Spengel (1840) argued that they were both produced by Demosthenes himself. More specifically, he suggested that the short version was extended into the long one (e.g. 1840: 184–5). The idea that Demosthenes is responsible for both versions is now more or less generally accepted (see De Robertis 2015: 231–3 for a brief summary of the debate in the nineteenth century; see also Trevett 1996b: 428–9); Canfora (1971: 50–3), however, hypothesizes that the short one is an abridgement of the long one resulting from the Alexandrian athetization of words and passages that would have been considered 'non-Demosthenic' (cf. also Blass 1893: 380). This hypothesis is based on evidence of ancient scholarly scepticism especially directed to obscene language. As Canfora mentions, in the second century AD Hermogenes (*Id.* 2.3 325.11–21 Rabe) attests that certain editors obelized such expressions from Demosthenic speeches (curiously, Hermogenes refers explicitly only to the spurious *Against Neaira*, the work of Apollodorus). Earlier on, Didymus (first century BC) reported that some regarded a word like ὀρρωδεῖν as suspicious and as a good reason to consider a speech altogether spurious (*in D.* col. 11.15–26)—it is not clear whether he agrees with this approach or not (see Gibson 2002: 126–7 and Harding 2006: 221–4). This claim, as Didymus explains, is based on the ostensible vulgarity of the word (lines 19–22), based on its (folk) etymological connection with ὄρρος (cf. Beekes 2010: 1111). It

[4] Canfora (1971: 49–50) maintains unconvincingly that a passage from Dinarchus' *Against Aristogeiton* (Din. 2.24) echoes the long version of D. 9.41 and discusses the quotations of D. 9.13 in Dionysius of Halicarnassus (*Th.* 54, *Is.* 13, and *Dem.* 9); these, however, are inconsistent and textually problematic (cf. Pritchett 1975: 143).

might be questioned whether it is correct to regard the remarks of Didymus and Hermogenes as alluding to the same editorial practices; at any rate, as Canfora himself observes, only the 'purged' texts are unanimously preserved in the textual tradition of the Demosthenic corpus and the obelized passages quoted by Hermogenes are nowhere else to be found. Even if we admitted that other passages lacking the blatant—and allegedly non-Demosthenic—obscenity discussed by Didymus and Hermogenes were obelized, it would still remain to be explained why this appears to be virtually the only Demosthenic speech whose editorial and non-editorial texts were both handed down to the medieval tradition.

Scholars who accept the hypothesis that the two versions go back to Demosthenes himself have debated which was composed first and how the other came to exist and survive—a problem connected to the general question of the publication of Demosthenes' deliberative speeches (see 3.4.3). Contrary to Spengel's early suggestion, a number of scholars believe that the longer version corresponds to the text originally prepared by Demosthenes for oral delivery and that the shorter one is the result of his own revision of the speech for publication as a pamphlet aimed at a Panhellenic audience (Treves 1940, cf. Sealey 1955: 101–4, Milns 2000: 208, and Wooten 2008: 168–73). Pearson (1976: 150–1), in turn, believes that Demosthenes' original manuscript contained both versions. On this view, the two versions might have originated because of different scribal interpretations of Demosthenes' private draft. Trevett (1996b: 439) observes that the two versions may derive either from two 'almost identical drafts' or from a single copy, on which the longer version would be 'either added in the margin or crossed out'. MacDowell (2009: 353–4) argues that Demosthenes first wrote the long version, and then abridged it before delivery:

> He decided that it was too long and crossed out some passages which he might omit; after his death, when scribes were put to work at making copies for sale, one included the crossed-out passages and another omitted them, so that alternative textual traditions were created. But that is merely a guess, and other explanations remain possible.

Croiset (1955: 91), instead, suggests more convincingly that Demosthenes wrote the short version first. If we assume that Demosthenes wrote the longer version and then deleted some parts of it, it is hard to imagine why a scribe understood that those parts should not be

copied and another did not, unless we were able to guess what editorial marks Demosthenes might have used for his own drafts. Croiset argues that the passages that are present only in the longer version were put down by Demosthenes as marginalia after having delivered the speech. The additions contain details and explanations, which might have been inserted in the text as Demosthenes spoke at the Assembly, and which he might have deemed worth recording. In this line of thought, it seems more plausible that certain scribes decided to include the additions into the main text and others did not,[5] giving birth to the manifold tradition at an early stage.

Now, it is more likely that the preservation of multiple authorial variants throughout the tradition of a text is due to an original situation of textual uncertainty than to the circulation of multiple editions of a text, especially if one assumes that at least one of them was licensed by the author (cf. Nicolai 2004: 168). If we believe that Demosthenes deliberately published one of the two versions of the *Third Philippic*, the hypothesis of an ambiguous autograph naturally loses ground. Accordingly, the existence of an alternative version would require a different explanation; for instance, it may be argued that this derives from an unauthorized transcription of the orally delivered speech or from a copy of Demosthenes' draft made by someone in his inner circle (cf. Canfora 1974: 69 and 2014b: 47–8 on the early circulation of Demosthenes' deliberative speeches). In order to accept this solution, one would need to believe that a 'bootleg' could remain authoritative enough to survive (and be included in collections) when an 'official' text came into circulation, which is anything but straightforward. It could be argued, for instance, that early (pre-Alexandrian) collectors wished to preserve all that was Demosthenic—a scenario that Blass (1893: 384–92) envisaged for another assembly speech, the *Fourth Philippic*, which he regards as a patchwork of Demosthenic material (see 3.4.3)—and that the long version came to be the 'editorial' one. Alternatively, the circulation of two equally authoritative versions could be explained by accepting the ambiguous autograph hypothesis. Demosthenes' own edited draft—which would not have been properly prepared for publication—would have been accessible to scribes only after the

[5] Thus already Weil (1881: 314).

orator's death, presumably on of the initiative of his nephew Demochares (see also 3.4.3).[6]

The manners and purposes of the circulation of a written text—whether or not in a form authorized and approved by the author—could vary greatly in classical Athens. 'Published' written texts could be used as scripts for public (re)performance or as scriptures for group or solitary reading in private (Thomas 2003: 164–72). Texts that were used as scriptures may or may not have gone through a script stage. Texts that were used as scripts after having been published in written form, however, would normally have been used as scripts before: it would be anachronistic to claim that a fifth- or fourth-century author primarily published a text (of a play, a speech, or a song) as a written script for some future public performance by his readers without having performed it (or having had it performed) first. Arguably, written scripts were produced for either the specific, ephemeral occasion on which they were meant to be performed (cf. Rosen 2006: 27 on drama), or at least the specific occasion that corresponded to their oral 'premiere' and the potential beginning of a tradition of reperformance. If we are to believe Athenaeus (6.98 270a), however, it could happen that texts that were composed to be performed orally in public could circulate in writing before they were performed for the first time: on his account, two fifth-century comedies, the *Sirens* of Nicophon and the *Thurio-Persians* of Metagenes, were never produced at all (*ἀδίδακτά ἐστι*; see Ceccarelli 1996: 112 on their dating). Athenaeus' witness is regarded as suspicious by Taplin (1977: 13), and Revermann (2006: 71–2, 330, followed by Hartwig 2014: 221) takes this passage as a mere indication that these plays were never staged in Athens or, at worst, that the respective productions were aborted for some practical reason. At any rate, such cases are to be regarded as exceptional and so is, in general, the breach of the connection between a script and its immediate destination. If this happened, it is most likely that this was beyond the author's intentions.[7]

[6] On Demochares as the compiler and publisher of the earliest Demosthenic corpus see Sealey 1993: 229 and Canfora 2014b: 49–50.

[7] On this point, Aristotle (*Rh.* 1413b12) mentions 'readerly' (*ἀναγνωστικοί*) dramatic and choral poets, but this should only be taken as a reference to their style (which approximates the *γραφικὴ λέξις* and is effective even if deprived of *hypokrisis*, cf. 1.3), not to their intended mode of reception (cf. Crusius 1902).

The task of the subsequent sections of this chapter will be to assign a place on Figure 3.1 to the extant Attic prose texts at the time when they were fixated in the written form that we read today, and, when possible, to describe the path leading to such place. Any use of written texts—as scripts or scriptures—in a given anthropological setting presupposes that some proportion of the population is able to read. The social identity of potential users of a script or a scripture is a factor to take into account to understand the dynamics of the early circulation and transmission of written texts. Especially in a culture where public oral performance played a major role in the dissemination of literary compositions, an author's decision to circulate a text as a scripture needs to be examined in relation to the size and social status of the potential readership.

3.2 SETTING THE SCENE (1): LITERACY AND READING IN CLASSICAL ATHENS

By the beginning of the fifth century BC alphabetic writing had already been in use in Greece for at least three centuries, and it had served all sorts of purposes, both practical and cultural (cf. Morgan 1999: 54, n. 26). Of course, literacy developed in different manners and to different extents across the Greek world. As far as classical Athens is concerned, a great wealth of literary, epigraphic, iconographic, and archaeological materials can help modern scholars reconstruct its function and nature. However, one must bear in mind that literacy is not a 'monolithic' skill but consists of several sub-skills (cf. Thomas 2009). Most importantly, leaving aside geographical (diatopic) and diachronic variation, proficiency in any such sub-skills varies across the social spectrum (diastratically). Therefore, when we talk about literacy in classical Athens, we must always specify whose literacy we are describing, and what specific sub-skills are involved.

Starting from the public sphere, it is fairly uncontroversial that the Athenian democracy made extensive use of writing, which was instrumental to the very working of the city-state (cf. Steiner 1994: 234 and Thomas 2009: 37–41). This close connection encouraged a view in scholarship according to which democracy itself is a product of literacy. This position is based on the 'optimistic' outlook on

literacy developed and popularized by such cultural historians and anthropologists as Havelock, Ong, and Goody, and which is ultimately related to McLuhan's technological determinism, that is, the claim that 'the identification of a society on the basis of its technologies of communication is in itself sufficient to predict the whole gamut of its cultural behaviours' (Finkelberg 2007: 293; cf. Finnegan 1988: 8 and Thomas 1992: 21–2). Scholars who subscribe to this point of view consider literacy as the factor that causes abstract and rational thought to rise and develop, as the case of sixth-century Greece should prove. When literacy meets political and legal life, no other outcome can be expected but democracy. This question has been widely debated (see for instance Thomas 1989: 22–7, Steiner 1994: 5, Yunis 2003a: 8–10, Morrison 2004: 110–15, Pébarthe 2006: 22–30), and this is not the place for another detailed summary. In brief, the 'optimistic' view has not stood up to anthropological field research.[8] Several studies have proved that literacy, like all technologies, is simply an 'enabling factor' (Finnegan 1988: 38). That is, learning how to read and write is not sufficient to foster cultural and mental development in individuals (see most notably Scribner and Cole 1981 and the reviews at Scollon and Scollon 1995: 19–21 and Rubin 1995: 310–14). Instead, this role is played by education and schooling, and the effects of literacy vary according to its function in society. The same neutral outlook must be applied to writing as a skill pure and simple: its social and psychological consequences are not intrinsic to the medium, but depend on its use (cf. Häcki Buhofer 2000: 254 and Harris 1995: 164–7). In Lloyd's words (1989: 72), writing 'permits, though it does not necessarily dictate, critical scrutiny, since the existence of written texts may and often does positively inhibit it'. The authority of written texts, that is, may discourage challenging transmitted doctrines (Lloyd 1989: 105–6). In general, writing is not a straightforward synonym for rational thought, objectivity, and accessibility of knowledge and information. Quite the contrary, it is often associated with the irrational (magic) and with despotic rule, as a way to mark possession: sizeable unpublished archives and inventories are typical of palatial states and oriental monarchies, and even such oriental inventions as maps and coinage can be interpreted as

[8] See also Scollon and Scollon (1995: 21–3) on the theoretical shortcomings of the concept of 'philosophical' orality (cf. 1.1) as an anthropological condition only in opposition to literacy, and of the idea that literacy replaces it in evolutionary terms.

expressions of the monarchs' control over land and trade (see Thomas 1992: 27, Steiner 1994: 5–8, 126–42, 147–85, 228, 241, Musti 1986: 21–5).[9] On these grounds, democracy should not be regarded as the product of writing, even though it remains true that it exploits the possibilities that this technology opens, and that it implicitly promotes its diffusion and use (cf. Morgan 1999: 53–4). According to Musti (1986), the distinctive features of democratic writing are its lack of secrecy (as is the case with epigraphic tribute lists, for instance), the clarity of the graphic layout, and even the choice of materials (stone as opposed to bronze, which is less suited to sizeable public inscriptions). Democratic Athens did not just use writing, but pursued and exported a precise and distinctive 'graphic programme' (cf. Thomas 1992: 138–40 and Gehrke 1998: 52 on the role of writing in establishing social identity).[10]

Even though it is true that public, epigraphic writing was extensively developed in classical Athens, it does not follow that a proportional share of the population was able to read: abundance of written record does not necessarily indicate abundance of literates (cf. Nieddu 1982: 237 and Thomas 1989: 17). More significant evidence can be gathered from a glance at Athenian education and by investigating whether and to what extent literacy—and what type of literacy—was a necessary skill for every citizen for both practical and cultural purposes.

Between the fifth and fourth centuries, schooling in Athens was customary, if not compulsory (see Schmitter 1975).[11] Education had

[9] As Steiner (1994: 7) remarks, 'despotic oriental kings [...] use written communications to replace oral encounters with their people'; cf. for instance Hdt. 1.99–100: *κόσμον τόνδε Δηιόκης πρῶτός ἐστι ὁ καταστησάμενος, μήτε ἐσιέναι παρὰ βασιλέα μηδένα, δι' ἀγγέλων δὲ πάντα χρᾶσθαι, ὁρᾶσθαί τε βασιλέα ὑπὸ μηδενός* [...] *Καὶ τάς τε δίκας γράφοντες ἔσω παρ' ἐκεῖνον ἐσπέμπεσκον, καὶ ἐκεῖνος διακρίνων τὰς ἐσφερομένας ἐκπέμπεσκε.*

[10] Whether or not 'democratically written' texts had an actual 'democratic' application is a different question, on which see Thomas 1995. According to Musti (1986: 34), a very large inscription such as the law code of Gortyn is the product of a 'constitutional' aristocratic government. As has been pointed out by Whitley (1997), this inscription had a monumental, symbolic character and was probably not meant to be read by the average Gortynian, while still encoding real laws; cf. Gagarin 2003: 70–2. The correspondence between clear and visible writing and democracy is not symmetrical.

[11] The Solonic law on education was a strong incentive for parents to provide their children with the 'skills necessary for living' (Schmitter 1975: 289), which need not mean schooling. Cf. Pébarthe 2006: 44–6. Education (we shall not examine here whether it involved literacy or not) was public and compulsory in Sparta (cf. Arist. *Pol.* 4.7 1294b22–4); see Millender 2001: 145.

to be paid for, and most families could not afford to send their sons to schools for more than three years (cf. Beck 1964: 81 and Webster 1973: 60). Up to the late fifth century, education consisted of gymnastics and *mousike*. It is uncertain whether *mousike* included or required literacy at all, if only instrumentally. It is likely that 'musical' disciplines (poetry, singing, playing, and dancing) could be taught entirely orally—written texts of songs would have been used only by teachers (cf. Currie 2004: 52 with further references). A third division of education, *grammata*, started emerging in the second half of the fifth century and established itself fully in the early fourth century. *Grammata* certainly implied basic literacy, but seemed to be oriented to literature rather than to its practical uses. In this respect, the boundaries between *grammata* and *mousike* seem quite blurry (Morgan 1999: 47–53, especially at 50, n. 16, and 59–60). The perception of *mousike* as a 'luxury', a type of education with no practical purpose and reserved for elite children (Beck 1964: 83–4, Golden 1990: 63, Pritchard 2004: 217), can be assumed only after *grammata* gained its independence as a distinct division of education. Since several sources point to differences in education between different social classes (Isoc. 7.45, Ar. *Ra*. 727–33, *Eq*. 1235–42, *V*. 1210–14, E. *El*. 528, Aeschin. 1.149),[12] it might be plausible that lower-class boys received only some sort of professional training which might have involved basic literacy, considered part of *mousike* (cf. Ar. *Eq*. 188–9; see Morgan 1999: 49 and 54).[13]

In general, literacy was desirable but not essential to practical living (including political activity), and ancient sources seem to stress its cultural relevance instead. Literacy, of course, started increasing in the second half of the fifth century, and so did the use of writing for both public and private documents (Morgan 1999: 53–7, Pébarthe 2006: 82–109, Harris 1989: 29–30, 76). The number of individuals who would need to access such documents, however, would still be quite restricted. Even though common citizens could be assigned public offices for which written records were used, it does not follow that they were able to read or compile them on their own, since they

[12] See Morgan 1999: 49 and Pritchard 2004: 217, n. 45. On Aeschines' avoidance of elitism and championing of the common *paideia* see Ober and Strauss 1992: 251–2 and Ford 1999: 250–3.

[13] If such was the case, professional training might fulfil the requirements of the Solonic law on education (see n. 11). Cf. Pébarthe 2006: 49–52.

could ultimately resort to literate secretaries (cf. Nieddu 1982: 242 and Pritchard forthcoming), even though it is realistic to suppose that they were able to access at least simple lists (Thomas 2009: 38–41).

A democratic procedure which has often been regarded as evidence for a wide diffusion of literacy is ostracism.[14] Once again, the mediation of literates was possible, and archaeological evidence seems to support this scenario. Excavations have brought to light a number of 'pre-compiled' *ostraka,* 190 of which bear the name of Themistocles and are written by the same hand. Nieddu (1982: 246–7) claims that such *ostraka* were prepared and distributed by political activists, or that they were produced to assist people with practical difficulties or impairments, including the illiterates, whom he regards as a minority. Even if this was the case, writing a name requires only a very basic level of literacy ('name literacy', as described in Thomas 2009: 18–23), of the kind described by Youtie (1971) for 'slow writers' in Roman Egypt—a society which depended on writing much more than the Athenian city-state (cf. Pébarthe 2006: 35–6).

On the other hand, many inscribed shards dating to the fifth century have been excavated in the *agora* (Nieddu 1982: 241, Pébarthe 2006: 53–6). The texts that they bear mostly consist of short sentences (above all, private messages and possession marks), showing a higher level of literacy than that needed to sign one's name or to write that of another man on an *ostrakon*. Other pottery presents commercial information (capacity, contents, date) or craftsmen's signatures. Boundary stones are also evidence for the private practical use of writing (Pébarthe 2006: 79–109). Such materials reveal the diffusion of basic literacy in lower layers of classical Athenian society (see Pritchard forthcoming, Thomas 1989: 31, and Thomas 2009: 25–8 on 'commercial literacy'). It is questionable whether this level of literacy enabled access to 'bookish' literature—which I shall discuss below—or even to lengthy inscriptions (cf. Flory 1980: 20 and Thomas 2009: 41).

As we have seen, inscriptions can be regarded as a visual and tangible representation of both the political system and of the specific juridical 'enactment they record' (Thomas 1989: 64). Their large number does not imply that a proportionate percentage of the population could or did read them. The same is true of public and private documents, whose oral dissemination was still fundamental in the

[14] So recently Missiou 2011; see Jim 2011 for criticism. On ostracism see Beck 1964: 77, Flory 1980: 19, Pébarthe 2006: 63–6, Thomas 1989: 18, and Thomas 1992: 11.

fourth century: in politics and law, writing can be considered a complementary technique which does not replace oral methods. Oral reperformance of inscriptions can also be envisaged, both in judicial and political contexts, with ritual public readings being carried out by officers such as the *mnemones* (Nieddu 1982: 237, Thomas 1989: 17, 35, 61–4, Flory 1980: 20, Longo 1981: 59–60, Thomas 1992: 62, Sickinger 2002).[15]

To sum up, we can estimate that a share of the Athenian population possessed more than basic literacy. This share consisted of the educated elite and of professionals who took advantage of this technology for practical purposes. This would be a specifically urban sector of the population, and literacy remained absent or very weak in the rural demes (Jones 2004: 175–81, Harris 1989: 67, 101–2).

The fifth century also saw the growth of book production and circulation (Morgan 1999: 58–9 with further references, Thomas 2003: 172, Pébarthe 2006: 71–6, Harris 1989: 84–5). Early books, like that of Heraclitus, can be considered tangible symbols of their author or their subject, and as such they were often dedicated in temples (Steiner 1994: 98–9, 203, West 1971: 6). It is possible that such texts started to be copied and circulated within restricted circles (Nieddu 1984: 215 and 223, Pfeiffer 1968: 29; cf. 3.3.5). A private and spontaneous activity of this kind might have developed into an actual business, involving specialized production and trade. Relatively clear evidence of this, however, starts to appear and accumulate only around the turn of the fourth century. A number of sources mention the commerce of *βίβλοι* (see Knox 1985: 9–10, Webster 1973: 17–19, and Hartwig 2014: 216–17);[16] however, the word *βίβλος* does not necessarily mean '(literary) book' but can also indicate blank papyrus or a document (see Flory 1980: 20, n. 33 and Thomas 1992: 13, n. 22). Book trade, or even simple private circulation, implies a target market of readers. Reading literature requires high-level literacy, and book collectors (as, for instance, Euthydemus, see X. *Mem.* 4.2.1; cf. Woodbury 1976: 354) and readers were still considered eccentric, if not elitist and suspect, in the second half of the fifth century. Books

[15] On *mnemones* see Carawan 2008 and cf. Maddoli 1992: 36–7, Thomas 1992: 69–71, and Small 1995: 159.

[16] These include several passages of Old Comedy, most of which are fragmentary (see Orth 2014: 69 with further references), and Xenophon's often cited mention of a ship carrying *πολλαὶ βίβλοι γεγραμμέναι* (*An.* 7.5.14).

could be associated with sophistic culture (see 3.3.5)—not to mention their centrality to an anti-politic cult like Orphism (Scodel 2011: 81–2)—and were the safest means of circulating minority opinions (Thomas 1989: 19–20 and 29–33, Thomas 2003: 164 and 185–7, Flory 1980: 18–19, Steiner 1994: 193–201, cf. Morgan 1999: 58). No source clearly mentions the fact that they were used in teaching—not even by the sophists (cf. Morgan 1999: 60, Thomas 2003: 165).

A clear example of the negative perception of 'bookishness' in fifth-century Athens is offered by Aristophanes' parody of Euripides' persona in the *Acharnians* (393–479, see Whitehorne 2002: 32–3) and the *Frogs* (explicitly at 943 and 1409, cf. Knox 1985: 9, Anderson and Dix 2014: 82–4).[17] This is a reminder that passages that point to the commercial circulation and relatively wide ownership of explicitly literary books may be charged with irony or comic exaggeration,[18] and they should rather be taken to testify to the diffusion of book ownership and reading among intellectuals and to the association of books with their public image. Aristophanes' description of Dionysus as a solitary reader of a 'romantic tragedy' (Woodbury 1976: 351) of Euripides aboard a warship (*Ra.* 52–3)—the earliest clear mention of solitary reading in Greece (Thomas 1992: 13 and Pfeiffer 1968: 28; cf. Knox 1985: 9)—and his claim that each spectator has a book and is a littérateur of sorts (*Ra.* 1109–16) should probably not be taken at face value (cf. Flory 1980: 20, *contra* Sommerstein 1997: 64). In Woodbury's words (1976: 354–5), if 'Aristophanes is able to appeal to a popular prejudice in his audience by ridiculing Euripides as a bookish poet [. . .] he is very unlikely to have sought to flatter the members of that same audience by complimenting them on their varied reading of literary texts'. Scodel (2011: 82) argues for an ambivalent attitude towards books and reading on the part of Aristophanes; however, the audience may simply be commended for being reasonably literate and

[17] Athenaeus (1.4) lists Euripides among famous book collectors of the past. Arguably, this piece of information may be based on Aristophanes himself (Anderson and Dix 2014: 84, n. 19).

[18] For instance, in a famous passage of Plato's *Apology* (26d–e), for instance, Socrates mentions that writings of Anaxagoras may be bought for a drachma or less. This was a very low price compared to that of blank papyrus, but it was possibly adequate for a small or second-hand book (see Knox 1985: 10). Socrates' remark, however, may be an ironic (Flory 1980: 21, n. 36) or circuitous allusion to the fact that the audience 'should know something about Anaxagoras, or, more likely, an attempt to bring the audience politely into the discussion of Meletus' inexcusable confusion' (Thomas 2003: 166).

able to judge poetry (cf. Woodbury 1976: 353 and 355) or, more pessimistically, this may simply be a joke—perhaps a tongue-in-cheek reassurance offered by the chorus to the character of Euripides (so Anderson and Dix 2014: 82)—that continues to build on the negative stereotype of 'bookishness'.

All in all, in the fifth century books were still rare and precious, and they were mostly used by professional singers as supports for memorization in view of later performance (Ford 2003: 36, Flory 1980: 21–2, Thomas 1992: 8–9). On the other hand, a remarkable number of vases (the earliest date to the Persian wars) portray reading and school scenes which involve rolls and writing tools (Webster 1972: 244, Webster 1973: 17, Burns 1981: 375–6, Nieddu 1982: 252–61, Ford 2003: 24–30, Morgan 1999: 48, n. 9).[19] Teachers used Homer and, starting from later in the fifth century, selections of non-lyric poets and prose writings for reading practice and memorization (Pl. *Lg.* 810e–811a, *Prt.* 325e–326a, cf. Ford 2003: 29 and Pritchard forthcoming). The questions remain open whether each student owned his own copy. In pictorial representations of books, it is often the case that a few words are painted on or around the roll. When decipherable, such texts often consist of poetic (mostly hexametric) phrases, which are sometimes loosely connected and nonsensical, and therefore merely decorative (Ford 2003: 24–5, Morgan 1999: 56, n. 38). The presence of poeticizing fragments on pottery points only to a 'reasonably high level of writing dexterity' for craftsmen, as Pritchard (forthcoming) puts it, and does not reveal much about their degree of literacy or education. Incidentally, a significant number of potters have non-Attic names (Cassio 1981: 84). When adults are portrayed on such vases, it is probable that they are would-be performers using the roll only to learn and rehearse a text. In order to appear on vases, school and reading scenes must not have been an unusual sight in fifth-century Athens. However, vases picturing them are relatively rare in comparison with other popular themes, and their quality is generally high, which suggests an elite audience, and ultimately, that such scenes were more familiar (but not necessarily exclusive) to the upper class (cf. Flory 1980: 22, Nieddu 1982: 252–61, Morgan 1999: 48, n. 9, Ford 2003: 24, n. 33, Pébarthe 2006: 46–9, and Harris 1989: 94).

[19] Whitehorne (2002: 28) interprets such depictions of books as symbolizing knowledge, rather than writing. On the history of the use of books in ancient (esp. Hellenistic) schools, see Del Corso 2010.

In conclusion, in the fifth century literature was mostly heard. Literary texts were read in schools as reading practice materials (which does not substitute for performance), or by professionals or keen individuals who used them to rehearse for oral performance (cf. Thomas 2003: 171). As we shall see (3.3.5), public lecturing from books was not uncommon, but it was an exogenous practice, probably originating in the Ionic world. Solitary reading and book collecting were eccentric activities, but quite remarkably, in the late fifth century private performances of written texts began to take place in houses of the Athenian elite (Wallace 1995: 206–7, Thomas 2003: 172; cf. 2.3). By the turn of the fourth century cultural and technical book reading was better established in wider sectors of the population (see Rihll 2003: 186–7 on the high-end book trade). Book-based self-education began spreading and, unsurprisingly, started to be criticized by those members of the 'intellectual elite' (such as Plato and Isocrates) to whom cultural reading was previously exclusive (Morgan 1999: 57–8, cf. Thomas 1992: 11 and Pownall 2007).

Let us now complete the description of the cultural setting in which Attic prose texts were produced by briefly surveying what other written literary texts circulated in classical Athens and the cultural practices connected to their use. Written texts of different genres were used in different contexts by different categories of readers (as scriptures) or performers (as scripts) and, in some cases, it is possible to trace, or infer, diachronic changes in such uses over the course of the fifth and fourth centuries. The readership of Attic prose genres could, but did not necessarily, coincide with that of other genres, and, in a diachronic perspective, it could continue cultural practices that originated in connection with other texts and writings—in particular, with earlier Ionic prose genres.

3.3 SETTING THE SCENE (2): GENRES AND WRITTEN TEXTS

3.3.1 Epic poetry

In the fifth century, Athenians were generally well acquainted with epic poetry. Recitations of Homer (a label that would also include cyclic material, cf. Huxley 1969: 116) were already regulated by Solon

(D.L. 1.57, cf. Huxley 1969: 115) and, as is well known, institutionalized by the Peisistratids (Rossi 1983: 16–18, Ford 1999: 232, Webster 1973: 165, Huxley 1969: 115). Rhapsodic contests were part of festivals such as the Panathenaia and went on throughout the fifth century,[20] in spite of the competition from drama (Huxley 1969: 113, Wallace 1995: 202) and, at least in the first half of the century, from narrative lyric poetry,[21] which Rossi (1983, cf. Obbink 2001: 81) calls 'epic lyric' or 'alternative epic'. On the other hand, epic poetry was not a particularly productive genre in Athens; or at least, local epics developed late, suffered from competition from other genres from the start, and soon fell into oblivion.[22]

As we have seen, Homer was taught in schools, both for reading practice and memorization (which need not itself imply reading from a written text). However, epic poetry was experienced by the vast majority of Athenians in public recitations (cf. Pritchard forthcoming, Ford 1999: 233). The role of written texts in the domain of epic poetry is very limited. The absence of line divisions and punctuation, and the key role played by music in poetic performance, are indicators that 'written texts recorded only an element of the total performance' (Thomas 1992: 119) and cannot be considered adequate substitutes for it. Of course, quotations and the use of epic material by literary authors, which was quite extensive in the classical period, do not imply resorting to written copies, especially due to the impracticalities of book rolls for this purpose. At this stage, we can argue that texts of epic poetry (whose circulation would have been quite limited) were functionally scripts for public performance (cf. Thomas 1992: 92–3, West 2003: 3, Reynolds and Wilson 1991: 1–2, Csapo and Slater 1995: 2). In didactic contexts, they would be used as scriptures in private situations.

[20] Rhapsodic performances are attested well into the Hellenistic age; see Webster 1973: 165.

[21] In particular that of Simonides: Cingano 2007: 93–4. Such works might have been performed in ways and on occasions similar to those of epic poetry (aulodic contests or public recitations—monodic, choral or mixed—as opposed to sympotic performances); see Aloni 2001: 95, 104–5, Boedeker 2001: 133, and Kowerski 2005: 113 with more cautious conclusions (at 144–5). The text of Simonides probably circulated in writing in Athens in the early fifth century; see Willi 2013: 135.

[22] On the *Theseides*, which probably date back to the second half of the sixth century, see Cingano 2007 and Neils 1987: 12. Cf. also Huxley 1969: 113–14 and 121–2, Webster 1973: 165, Notopoulos 1964: 26 and 44, Rossi 1971: 77.

3.3.2 Monodic poetry

Monodic poetry (which includes melic genres, elegy and iambos, cf. Budelmann 2009: 2–3) mostly belonged to private (or 'semi-public', Carey 2009: 33–4) parties—in particular, to the aristocratic symposium (cf. Carey 2009: 33–4). Its formal norms of interaction and agonistic nature characterize poetic performance at the symposium as fundamentally public (in the sense explained at 2.3; see Ford 2002: 25–45, especially at 35, and Węcowski 2014: 10–11, 79). The case was probably different with the familial singing or recitation of poetry, as described by Aristophanes (*Nu*. 1353–76). Narrative elegies, as we have seen, were almost certainly performed (also and primarily) at public festivals (Aloni 2009: 179, Carey 2009: 23, cf. n. 21 above). 'Old songs', as Webster (1973: 166) calls them, still circulated especially in aristocratic environments, as the presence of the Theognidean corpus in the Athenian repertoire reveals (Aloni 2009: 175–6).[23] Lyric production from the past was probably learnt in schools (as part of advanced *mousike*, not of basic literacy instruction) by elite boys (cf. Ford 2003: 25 and Swift 2010: 43) and represented the high end of Athenian song. Later in the fifth century, symposia of an aristocratic kind came into fashion in lower layers of the population, and topoi of sympotic culture, including songs, seem to have circulated relatively widely by that time, without losing their elite connotation (Swift 2010: 44–55).

Overall, sympotic poetry was still a productive genre in classical Athens. Such production is represented by the monodic fragments of polygraphs like Ion of Chios, Euenus of Paros, Dionysius Chalcus, and Critias, and by anonymous *scolia* (drinking songs; see Aloni 2009: 176–8, and Webster 1973: 167 on Sophocles as a sympotic poet). Attic *scolia* have traditionally been regarded as a product of sixth- and early fifth-century aristocratic culture (see for instance Bowra 1961: 373–97). However, it is not necessary to infer such a restricted context for their composition and performance. Aristophanes, for instance, mentions a famous *scolion*, the 'Harmodius song'

[23] Vases depicting sympotic scenes often contain quotations of well-known lyric verses. Vetta (2000) has identified lines 885–94 of the *Sylloge* as clearly Athenian, since they probably refer to the Euboea campaign of 506 (Hdt. 5.77). He also regards the inclusion of Solonian materials in the *Sylloge* as evidence for its circulation (or even its compilation) in an Athenian environment. Echoes of Theognis are also detectable in Plato (cf. *Ly*. 216c and Thgn. 1.15–18 in particular); see Lane Fox 2002.

(quoted by Athenaeus 15.50), as a feature of both aristocratic and popular banquets (Ar. *V.* 1225 and *Ach.* 980 respectively), and according to ancient musical theorists *scolia* were commonly performed at weddings (cf. *Σ* Pl. *Grg.* 451e2 and Aristox. fr. 125 Wehrli = *Suda*, s. v. *σκολιόν*). The manner in which *scolia* were performed (that is, in sequence by individual singers, with the possibility of improvising) is itself paralleled by popular practices of several other cultures (Yatromanolakis 2009: 271–5).

Pictorial evidence and comic allusions show that lyric poets of the past were quite well known in fifth-century Athens. Literary allusions could consist of literal or adapted quotations, echoes of expressions or motifs, or mere mentions of works and poets (Kugelmeier 1996: 3–4). Vague allusions could be understood by non-elite members of the audience, if we assume that old poets were well known at least as public figures (Swift 2010: 40–2). Understanding textual quotations, on the other hand, requires direct acquaintance with the texts themselves. Above we have ruled out the possibility that non-elite Athenians learnt lyric songs at school or from written texts. It is possible that old songs circulated outside the aristocratic symposium, in a more or less altered form, as *scolia*. As a matter of fact, some *scolia* directly echo passages of 'high' lyric poetry. Interestingly enough, some comic allusions seem to refer to a *scolion* rather than to the original lyric passage that inspired it.[24] Reworking and simplification of prestigious materials into *scolia* can well be considered a plausible consequence of both oral transmission and sympotic improvisation (Kugelmeier 1996: 306–8). Less sophisticated songs of this kind could have originated in aristocratic environments and subsequently spread through different layers of the population. Possibly, dramatists also relied on this second-hand knowledge of lyric materials in order to be sure that their allusions were understood by the majority of the audience.

As we have seen, written copies of monodic songs circulated in the fifth century virtually only as 'scores' for rehearsal (Thomas 1993: 226).

[24] A striking example is represented by Pindar's fragment 95 (*ὦ Πάν, Ἀρκαδίας μεδέων / καὶ σεμνῶν ἀδύτων φύλαξ, κτλ.*), which was reworked into a *scolion* (*PMG* 887): *ὦ Πὰν Ἀρκαδίας μεδέων κλεεννᾶς / ὀρχηστὰ βρομίαις ὀπαδὲ Νύμφαις / γελάσειας ὦ Πὰν ἐπ' ἐμαῖς / †εὐφροσύναις ταῖσδ' ἀοιδαῖς αοιδε† κεχαρημένος*. This *scolion*, in turn, seems to be alluded to by Aristophanes (*Th.* 977–85): *Ἑρμῆν τε νόμιον ἄντομαι / καὶ Πᾶνα καὶ Νύμφας φίλας / ἐπιγελάσαι προθύμως / ταῖς ἡμετέραισι / χαρέντα χορείαις. / ἔξαιρε δὴ προθύμως / διπλῆν χάριν χορείας. / παίσωμεν ὦ γυναῖκες οἷάπερ νόμος, / νηστεύωμεν δὲ πάντως*. See Kugelmeier 1996: 44.

Collections of poems, such as Theognis' *Sylloge*, were probably compiled at this stage of transmission (Rossi 1992: 89). Teaching and reperformance do not imply the use of a written text, nor do textual quotations, as we noted with regard to epic poetry (Ford 2003: 22–3, 36, *contra* Rossi 1992: 89). A public of readers, which entails a disconnection between text and musical performance, can be envisaged only for the fourth century. Such readers would mostly be interested in the formal properties of the texts, which lacked stichometry and musical notation (Ford 2003: 18–19, Budelmann 2009: 8–9).

3.3.3 Choral poetry

In Swift's words (2010: 36), 'choral performance permeated every aspect of Greek life, whether private or public, religious or secular'. Choral poetry was publicly performed at private ceremonies such as weddings and funerals as well as during civic festivals and celebrations (cf. Thomas 1992: 119). Victory odes are attested in Athens in the first half of the fifth century (both Pindar and Bacchylides were hired by Athenian clients) and, in spite of the decline of this genre in the second half of the century, Euripides wrote one for Alcibiades in 416 (see Swift 2010: 39–40, 106–18, Webster 1973: 167–8, and Bowra 1960). Starting in 509 BC (*Marm.Par.* l. 61), dithyrambic competitions began to be held on the first day of the Great Dionysia (cf. Zimmermann 1991: 9–10). Many Athenian citizens took part in choruses—less so, however, when competition came in: as Pritchard (2004) suggests, it is likely that dithyrambic and tragic choirs were formed by members of the educated elite (cf. Swift 2010: 37–8). Choral poetry could be expressly composed for the symposium (cf. Carey 2009: 23). Symposia could also be the setting of smaller-scale—even monodic—reperformances of public choral songs. This possibility has been envisaged for Pindar's epinicians in particular (Currie 2004: 55–63, cf. Rossi 1992: 86–9). Written texts of choral poetry would probably be used both by school teachers (of *mousike*, cf. Nagy 1990: 112, Currie 2004: 52) and by dramatic and dithyrambic chorus instructors (*chorodidaskaloi*, cf. Marshall 2014: 245).[25] Pupils

[25] On *chorodidaskaloi* see Csapo and Slater 1995: 352–3 and Marshall 2014: 9, 136. On dithyrambic *didaskaloi* see Ieranò 2013.

and chorus members are not likely to have had (or needed) access to a written copy of the text.

3.3.4 Drama

In classical Athens, drama was probably the literary genre that reached the largest audience, if we take into account both the attendance (cf. 2.3) and the frequency of dramatic performances (see Csapo and Slater 1995: 106–7 and 121–4, Zimmermann 1991: 8–11). Tragic and comic texts were composed in writing and used as scripts by professional actors (cf. Easterling 1997: 156, Scodel 2007: 129). Especially in the first half of the fifth century, these may have included the authors themselves (cf. Csapo and Slater 1995: 221). Written texts survived the performance for which the plays had been composed (Rosen 2006). Reperformance of old tragedies at the City Dionysia was officially allowed in 386—a similar law had been voted for Aeschylus alone in 456 (Zimmermann 1991: 2, 4, and 12), whereas comedies started to be restaged only in 339. Smaller-scale reperformances, however, must already have been customary at such local festivals as the Rural Dionysia or outside Attica, as evidenced by the activity of travelling actors and playwrights across the Greek world (see Cartledge 1997: 6–8, and 24, Easterling 1997: 156, Csapo and Slater 1995: 3). The possibility of reperformance led dramatic poets to revise their plays, a practice which became quite customary (see 3.1), and favoured the dissemination of written copies of the text (Sommerstein 1997: 64). It is also possible that tragic recitatives were included in the non-lyric poetry sections of school books and learnt by heart by students of *grammata* (cf. Rosen 2006: 31). However, as is the case with other genres, sizeable written circulation can be contemplated only for the fourth century (cf. 3.2). As we have noted above (3.1), such circulation might or might not have been authorized by the writers, and interpolations were more than common, as shown by Lycurgus' effort to establish an official text of Aeschylus, Sophocles, and Euripides in 330 BC (see Scodel 2007: 142–7, cf. Csapo and Slater 1995: 4 and Zimmermann 1991: 4).

Parallel to continued use as scripts for public performance, 'scripturification' can also be envisaged for classical dramatic texts in the fourth century. As Aristotle reports (*Po.* 1462a2–12), tragedy could be read, rather than acted, retaining most of its qualities and avoiding

the risks of bad and vulgar recitation: the written text had become independent of *hypokrisis* and, conceivably, of public performance (cf. Knox 1985: 13).

3.3.5 Ionic prose

Prose, if defined as 'ordinary, non-metrical language', obviously predates its earliest written records. Non-literary uses of written prose (possibly on perishable materials) must have emerged as soon as alphabetic writing was introduced to Greece, and epigraphic prose is well established from the late seventh century onward (Kahn 2003b: 142). Early utilitarian prose texts included laws and, reportedly, construction guides compiled by architects for specific projects (see Laks 2001: 145). However, it does not follow that utilitarian prose *books* (such as technical treatises) were produced from an early date. As we have seen, writing and literacy played a marginal role even in early schools, and it does not seem plausible that books were used for technical or professional teaching, which was not institutionalized (cf. n. 11 above) and, in principle, could be entirely oral (Hawke 2003 *contra* Kahn 2003b: 149–53).

The earliest non-literary prose books we know about are geographical works. Greek geography is rooted in sea trade and naval warfare. Merchants and sailors would gather empirical information about sea routes, ports, and landmarks. This would give birth to navigation guides that were transmitted orally (Peretti 1979: xi, 7, and 17–19, cf. Corcella 1992: 266). In addition, it is likely that merchants were among the first social groups to exploit the technological potential of literacy (cf. Thomas 2009: 25–8), and it is not too surprising that oral navigation guides became written *periploi* as early as the sixth century. Such texts were most likely used as scriptures. On the other hand, maps did not have much to do with navigation. Early Greek cartography was quite unempirical and developed around the mid-sixth century in intellectual milieus (Corcella 1992: 270).[26] Cartography had long been practised by Near Eastern cultures, where it mostly served a symbolic rather than practical purpose (Steiner 1994:

[26] According to Eratosthenes, the first Greek map of the *oikoumene* was drawn by Anaximander, followed by Hecataeus, *FGrHist* 1 T11b and T12a [= DK12 A6], T12b. Cf. Pearson 1939: 140, Jacob 1988: 273, 281.

147–9, Jacob 1988: 274 with further references), as remarked above (3.2). Early Greek maps could serve similar purposes. While summarizing in two-dimensional representations the 'unidimensional' contents of lengthy *periploi*, they provided a starting point for speculation about the shape and nature of the world and at the same time opened up the possibility of building abstract, geometric models aimed at favouring intellectual mastery of the *kosmos* (Jacob 1988: 276–89).

Literary prose also appears in the Ionic world in the middle of the sixth century. According to tradition, the earliest Greek prose writers were Pherecydes of Syros and Anaximander (cf. Schibli 1990: 1–4, West 1971: 3–4, Fritz 1938, Toye 1997, and Fowler 1999), the former being a sort of travelling 'holy man' (and, allegedly, the teacher of Pythagoras; see Schibli 1990: 1–13), the latter a well-known representative of the emerging Milesian tradition of natural philosophy. Pherecydes' subject matter was theogony, which had of course belonged until then to the domain of hexameter poetry. As we have seen, books can by no means be regarded as a primary means of transmission before the turn of the fourth century. The initial dissemination of Pherecydes' work was undoubtedly oral and was due to the author's own activity; it is likely that he wrote his book as a *συγγραφή*, a mere script for himself to base his performance on (West 1971: 4–6, Bernabé 1979: 362). The question why Pherecydes broke the tradition by writing a prose theogony can be addressed by taking into account both the content and the context of his work. Pherecydes combined local customs with exogenous (Semitic and Indo-Iranian) motifs into an alternative theology in competition with the Homeric and Hesiodic tradition. His doctrine was not much more rational than the traditional one, despite being possibly more systematic and 'aetiological', establishing more clearly the cause–effect relationships (West 1971: 75, Schibli 1990: 132–3, cf. Kahn 2003b: 144–5). On the one hand, the prosaic form was instrumental to marking the difference between Pherecydes' doctrine and its competitors (Kahn 2003b: 143, Schibli 1990: 133–4, Laks 2001: 147); on the other, it seems to imply different occasions for performance (not 'mass' religious festivals nor poetic contests, but 'niche' public *epideixeis*, cf. Granger 2007: 425–8 and Kahn 2003b: 152). If West (1971: 7) is right, the text was preserved by the Pythagoreans. It seems unlikely that it circulated in fifth-century Athens: even Plato appears to ignore Pherecydes. However, Aristotle explicitly mentions

him (*Metaph*. 1091b8), which could be taken as evidence for some restricted circulation of the book later in the fourth century.

Anaximander's book has been called by Kahn (2003b: 145) the 'first specimen of a new genre, the treatise *peri physeōs*'. This genre, of course, was paralleled by hexameter poetry on nature. Like Pherecydes, Anaximander was a 'transitional' thinker—he does not adopt a fully rational approach in his study of nature—and apparently was still quite affected by the poetic tradition. According to Kahn (2003b: 152–3), his preference for prose over metre was due to the influence of Ionian technical treatises, which, as he argues, were gradually replacing non-fictional poetry. This however, was not the case—as Finkelberg (2007: 294) remarks, 'philosophical, historical, astronomical, geographical, and other non-fictional compositions cast in verse still constituted an integral part of the Greek and Roman literary scene'. Moreover, as we have seen, the assertion that a substantial number of written technical texts circulated in sixth-century Ionia rests only on speculation (cf. Hawke 2003). Also, it would be anachronistic to think that Anaximander's book was meant as a means of diffusion for his thought. Anaximander inherited from Thales (who left no written work) a 'geometric' approach to nature and drew the first Greek map of the *oikoumene* (Jacob 1988: 279, cf. also West 1971: 77–8 and Dicks 1959: 298 on Thales). This map was a support for speculation and teaching: 'graphics' allowed the 'objectivization of knowledge' (Jacob 1988: 282). If such was Anaximander's attitude towards graphics—which of course include writing—we can imagine that he wrote down his teaching material and compiled a prose treatise. In this respect, Kahn (2003b: 145–7) is right in likening Anaximander's teaching to technical education. His book might have originated as a script for this specific purpose—an *aide-mémoire* for the teacher, rather than reading material to circulate among his pupils (*pace* Thesleff 1990: 112). Incidentally, this does not imply that such a text was unpolished and devoid of ornamentation. In principle, 'lecture notes' could, and probably did, preserve stylistically marked and well-composed fragments of the prepared text (*pace* Granger 2013: 178, n. 28). At any rate, Anaximander's book did not circulate much outside Miletus. It was mostly unknown in mainland Greece: apparently, it did not even survive in a complete form to the age of Theophrastus (Kirk 1955: 37–8).

Out of all early Ionic prose works, Heraclitus' 'book' (or 'collection of aphorisms', see Most 1999: 350 and Granger 2004 on the nature of

this work) surely circulated in classical Athens. Heraclitus' obscure and oracular prose was not certainly aimed for large audiences (Osborne 1998: 30, cf. Thomas 2000: 173 and Thesleff 1990: 115). Its mystic character required exegesis, and the written text (which was rhythmic and was probably performed orally) was a necessary starting point. According to Diogenes Laertius (9.6.10), Heraclitus' *syngramma* became so popular that it gave birth to a 'textual community' of followers, the Heracliteans (see Rossi 1992: 93, Lilja 1968: 29–30, Dover 1997: 163–4, Steiner 1994: 88–9, 202–3). If it is true that the Heraclitean doctrine reached Athens (with Cratylus as a famous representative), it follows that the book itself was brought to the city, where it retained its status of scripture.[27]

Roughly contemporary to Heraclitus, Hecataeus drew a map and wrote geographical and genealogical prose works. The writtenness of his work is clearly declared by Hecataeus himself (*FGrHist* 1 F1). Indeed, it is a prerequisite for his intellectual activity (and that of other Ionian genealogists), which was based on a comparative, systematic method (see Thomas 1989: 181–95, Detienne 1986: 72, Bertelli 2001: 83–4, and Fowler 2001: 103–5; cf. Nieddu 1993: 153–6). It is not easy to assess whether (and how) Hecataeus' work ever reached Athens. Genealogy as a genre was also practised by the earliest Athenian prose writer, Pherecydes, who was active in the first half of the fifth century (the exact date is far from established; see Jacoby 1947, Huxley 1973, Fowler 1999). Periegetic geography, a genre of Homeric descent, could certainly appeal to popular audiences (Corcella 1992: 265, Kahn 2003b: 154).[28] In particular, it must have been of interest in Athens after the Persian wars, as the city was developing into a 'cosmopolitan' capital, and it could also have contributed to the creation of an imperial ideology (Kennedy 2006, Webster 1973: 217–18). Unfortunately, the evidence for the way the genealogists' and geographers' *logoi* were performed is even scantier than their fragments, and not much can be concluded about their audience.[29] The most likely scenario is that the logographers travelled

[27] This is in perfect accordance with an episode related by Diogenes Laertius, according to which the book collector Euripides gave Socrates his copy to read (2.22.5).

[28] On the shared formal features of genealogical and periegetic prose see Nieddu 1993: 160.

[29] Performance of genealogies is well attested in the late fifth century, Thomas 2003: 173.

across the Greek world, in the same way as rhapsodes had been doing.[30] As is well known, this custom flourished later in the fifth century. As Carey (2007: 238) puts it, 'in a world without a book trade, ideas needed to be in verse in order to survive'; this would be obviated by the personal circulation of the intellectuals themselves, and it is also thanks to their activity that 'prose steadily emerges as a rival to poetry'. Intellectuals toured every corner of the Greek world, and Athens was a major centre of attraction (also exporting its own intellectuals), albeit not the only one (see Thomas 2000: 11–13). A major (and early) group of travelling intellectuals were physicians, who gave public demonstrations of their medical skills and often sought civic appointment (cf. van der Eijk 1997: 84–5, Thomas 2000: 249, and Dean-Jones 2003: 116–17). Their demonstrations (and, possibly, their lessons) included practical displays and epideictic speeches, which are preserved in some of the texts that make up the *Corpus Hippocraticum*. The earliest extant written redactions of Hippocratic works are dated to the late fifth century, and by that period Hippocratic material certainly circulated in Athens (cf. Craik 2001). Strictly technical works were most probably put into writing for the sake of organization and accessibility for fellow doctors. Epideictic works, on the other hand, could still serve as scripts for teaching and demonstrations (see van der Eijk 1997: 93–8, Lloyd 1975: 189 on dating problems, Thomas 2000: 250–4, Thomas 2003: 175–6, and Jouanna 1992: 549 and 109–24, who draws a distinction between 'cours' and 'discours'; cf. van der Eijk 1997: 79).

From the second half of the fifth century, Athens was visited by many of the most prominent thinkers in the Greek world. Parmenides and Zeno once attended the Great Panathenaia, probably on a political mission (Pl. *Prm*. 127a–b; see Panebianco 1970: 59 and 62, Thomas 2000: 11). Anaxagoras moved from Ionia and spent thirty years in Athens before being exiled (D.L. 2.7.10, DK59 A3 = *Suda*,

[30] Chaniotis 1988: 366. A similarity with rhapsodes has often been pointed out as regards the sophists—for instance, Schiappa 2001: 98–102 calls Gorgias a 'prose rhapsode'. This interpretation rests on both the stylistic features of their prose and their adoption of poetic attitudes and looks in performance; cf. Kerferd 1981: 29, Cole 1991: 71–4. For analogous reasons (cf. Lilja 1968: 14–34 on poetic language and metrical sequences, and Dover 1997: 160–4 on rhythm) it does not seem inappropriate to extend this label to other early prose writers.

s. v. *Ἀναξαγόρας*; see Steiner 1994: 204). If Plato (*Phd.* 97b–c, *Prm.* 127c–d) is not backdating a custom of his own day, both Zeno and Anaxagoras gave more or less extempore readings of their books, which were probably transcribed and circulated with or without their consent (see Nieddu 1984: 237–9, Thomas 2003: 165–6, and Warren 2007: 17–18). Herodotus, in turn, came to Athens in the second half of the 440s and it is likely that he held public lectures there (see Webster 1973: 220, Thomas 1992: 4, Thomas 2000: 257, and Fowler 2001: 107; Pearson 1939: 8–9 and Momigliano 1980: 366–8 for a discussion of the primary sources). In these lectures he probably presented some of the materials that he would eventually rework into his lengthy book, which was designed as such for a necessarily restricted audience of readers (see Johnson 1994, and Thomas 1992: 125).[31] The written text we possess was probably intended by Herodotus himself as a scripture for private reading. Nevertheless, several points would replicate more or less faithfully elements of the materials which were performed in public (cf. Thomas 2000: 260 and Flory 1980: 22–7).

In the following decades, Athens became a major centre of attraction for the sophists. Most of them would only pay short visits, charm the young, and—from a traditional Athenian point of view—spread dangerous relativistic ideas and the equally dangerous skill of how to spoil democracy by manipulating the people through the art of persuasion. Rhetorical elaboration was as highly appreciated in entertaining epideictic performances as it was considered suspicious in serious 'pragmatic' speeches: it was easily tracked back to written preparation and, ultimately, to a penchant for private (or even anti-democratic) decision-making (Kerferd 1981: 24–7, Schiappa 2001: 50–3, and Thomas 2000: 11–13; cf. 1.1). Sophistic performances were oral and included both improvised and written pieces. Xenophon (*Mem.* 2.1.21 and 34), for instance, presents Prodicus' *The Choice of Heracles* as a written *syngramma* delivered orally in public *epideixeis*. This piece was included in a work entitled *Horai* (cf. *Σ* Ar. *Nu.* 361a), and Plato seemingly alludes to its circulation as a book in the *Symposium* (177b, cf. Thomas 2003: 169).

[31] Flory (1980: 14) reckons that 'a reading of the whole text would have required fifty or more hours, a team of readers and a number of days exceeding the length of any known festival'. Not all parts of the *Histories* derive from *logoi*; see Canfora and Corcella 1992: 443–7, cf. Rösler 2002: 83–5 and 93–4.

Sophists did not normally use written texts when teaching (see Thomas 2003: 180 and Kerferd 1981: 28–9, cf. 3.2). Their lessons would take place in private houses and small groups and usually consisted of talking and debating, but they could also include lectures, which were prepared in advance. For instance, both Aristotle (*Rh.* 1415b15–17) and Plato mention that Prodicus had in his repertoire both a 'premium' (fifty-drachma) and a 'basic' *epideixis*. Incidentally, in the *Cratylus* (384b) Plato attributes the price of one drachma to Prodicus' 'basic' *epideixis*—the same price alleged for Anaxagoras' book (cf. 3.2 and Lloyd 1991: 135). This is suspicious and reinforces the idea that both observations are ironic, as the mocking tone of the passage from the *Cratylus* would lead us to think (cf. Thomas 2003: 165). The sophists used to hand out written copies of their speeches for their students to memorize the contents as well as for rhetorical exercises (Arist. *SE* 34 183b38–9, cf. Schloemann 2002: 135, Kerferd 1981: 30–2, Cole 1991: 75, and Cooper 2004: 146–8). Evidently, this also contributed to their association with 'writtenness'. Their speeches, which can be regarded as scripts recording the original performance more or less faithfully, were also reperformed in new public *epideixeis* or read privately, in which case they were used as scriptures (Thomas 2003: 164, 172, and 180–1).

By the age of the sophists, Attic had dramatically increased its influence on Ionic prose. Non-Athenian writers such as Gorgias started using this dialect (Cassio 1981: 89–90), thus violating a central feature of the Greek literary system—the connection between genre and dialect. According to Willi (2010a: 111–14), such a 'rebellion' fits well in the cultural atmosphere of the sophistic age and its philosophical reflections on *nomos* and *physis*. Writing prose in Ionic would correspond to following an artificial *nomos*, whereas writing prose in Attic meant abiding by the *physis* of the (Athenian) audience. It is remarkable, for instance, that of two pupils of Parmenides, Zeno, who had close connections with Athens, wrote Attic prose, whereas Melissus of Samos, who did not, wrote in Ionic (Cassio 1989: 143).[32] In the end, *physis* prevailed, and by the final decades of the fifth century Attic had become the language of Athenian prose.

[32] The same transition from Ionic to the use of local dialects in prose writing can also be noticed in Doric areas; see Cassio 1989, Willi 2010a: 115.

3.4 THE CIRCULATION AND USE OF ATTIC PROSE TEXTS

In a context where the habit of reading literary texts (and the necessary literacy skills) were limited but expanding, a writer could produce a manuscript of a text either to be used as a script by himself or other performers (clients or actors) or trainers (e.g. *chorodidaskaloi*), or as a scripture for an audience of group or solitary readers. Such scriptures could be copied and introduced into the book market, or exist in one or a restricted number of copies and be used in-house, in institutions like the Academy, for instance. Publication—or, rather, release—could simply consist of making such private writings accessible to the public, whether or not this implied the possibility for readers to copy and circulate them (cf. van Groningen 1963: 10, Dover 1968: 152, and 3.4.2). The Attic prose texts that we read today were all released at some point: no copies from any writer's private archive have physically survived to our time. Before any form of release could take place, the author would have needed to put down the stylus, at least temporarily, whether or not publication in writing was his own conscious decision. As we have seen, the text of Demosthenes' *Third Philippic* may continue the prepared script of the speech with the post hoc addition of unedited material; when the text was released, its function would certainly be that of a scripture, but its conception, if we may reuse Oesterreicher's term (cf. 1.1), would in large measure be that of a script. Theoretically, however, the 'scripturification' of an original script could involve extensive reworking, especially if publication was intentional. Since we do not normally have secure evidence that any given text was revised and, if so, to what extent, we cannot be sure about the degree of correspondence between the original scripts and the scriptures that we read today. Unsurprisingly, scholarly opinions diverge considerably on such issues (as shall be detailed in 3.4.3). In principle, we must bear in mind that written circulation does not entail revision, and that revision does not entail publication (cf. Nicolai 2004: 20 and MacDowell 2009: 8).

Determining the conception of a written text as a script or a scripture is crucially important for the purpose of this study, that is, to assess how the language of Attic prose is optimized for the off-line and on-line conditions that characterize the reception of scriptures and scripts respectively. Once again, we shall proceed in our survey by

centring on the practices and cultural customs related to the reception of written prose texts on a genre-by-genre basis.

3.4.1 Historiography

In the late fifth and early fourth century, historiography was not merely an entertaining genre, nor was it meant to be a scientific study of the past in a modern sense (it never became a school subject as such, cf. Thomas 1989: 3). An important feature of classical historiography is its paradigmatic and educational nature. Thucydidean historiography focuses on political and military analysis, whereas the school of Isocrates emphasizes ethics. This made the texts of the historians particularly suitable for the 'higher education' of would-be politicians and orators, if it was at all possible to distinguish between them in fourth-century Athens (see Nicolai 1992: 11–29 and Nicolai 2007). It is likely that historical works were read in gymnasia and more or less 'private' educational institutions, such as the Academy and the Lyceum (Morrison 2007: 224–5), as well as by writers and intellectuals (see Hornblower 1995 on the reception of Thucydides in the fourth century). We have no information about epideictic performances of Thucydides, Xenophon, or the Atthidographers,[33] and we can confidently assume that their works were conceived as books—not as *logoi* or collections of *logoi*—from the start (cf. Thomas 1992: 103, Morrison 2007: 219, Harris 1989: 86, and Rösler 2002: 79). In short, post-Herodotean historiography was a fully 'written' genre, with all historical works being used as scriptures. Indeed, Thucydides, in his famous programmatic paragraph (1.22.4), seems to envisage *ἀκρόασις* ('listening' or 'lecture') as a possible destination for his work, while clearly stating that it is not simply an *ἀγώνισμα ἐς τὸ παραχρῆμα ἀκούειν*. If *ἀγώνισμα* is to be taken as referring to public epideictic performance, its rejection does not exclude *ἀκρόασις* altogether (Morrison 2007: 226–7; *contra* Yaginuma 1995: 141–2).[34] Simply, reading aloud would not result

[33] On which see Jacoby 1949 and, more recently, Harding 1994: 9–35.

[34] An alternative interpretation attaches to *ἀγώνισμα* the meaning of an accomplishment met with popular favour; see Johnson 1994: 232–8. Bakker (2002: 31–2) connects it with Herodotus' description of his work as an *ἀπόδεξις*, which he interprets as meaning the 'monumental record of an achievement'. Such terms, in this

in a display performance and would take place in small, private settings, as Kelly (1996) reconstructs for the works of Xenophon as well (cf. Pownall 2007: 246).

A short note on a work which has raised much scholarly disagreement, the anonymous *Constitution of the Athenians*, whose author is traditionally referred to as Pseudo-Xenophon or the 'Old Oligarch'. Many claims as to the date, the authorship, the place of composition or publication and the intended audience have been made (see Marr and Rhodes 2008: 31–2 for a summary). Marr and Rhodes (2008: 5–16) conclude that the *Constitution* might be a rhetorical exercise dating to the 420s, probably written by a student of Antiphon's (cf. Thomas 2003: 184). This, however, leaves unanswered the question of how an allegedly unsophisticated and juvenile piece of literature survived the classroom and ended up being numbered among Xenophon's minor works without even having been published (Mattingly 1997: 352), if not by sheer luck. On such grounds, we may conjecture only that it is unlikely that this short work was ever performed in a public situation.

3.4.2 Philosophy

Around the turn of the fourth century, philosophical dialogue emerged as a new literary genre, with Plato as its best known, but not its only, representative. Fictional transcriptions of conversations held by Socrates—which Aristotle (*Po.* 1447b11) calls *Sokratikoi logoi*—were produced by several other Socratics, most of whom were older than Plato and started their production before he did.[35] The tradition on the creation of this genre is mostly anecdotal and not excessively trustworthy.[36] It is likely that some followers of Socrates used to report some memorable conversations of his or tried to imitate his style of conversation while he was still alive, and that

light, should be unrelated to the mode of publication and should rather refer to the intrinsic value of the literary work.

[35] The most prominent are Antisthenes, Phaedo of Elis, Euclid of Megara, Aristippus of Cyrene, and Aeschines of Sphettus. See Kahn 1996: 4–29, Clay 1994: 26–32.

[36] The alleged inventors of the genre include Zeno of Elea, Alexamenus of Syros (D.L. 3.48), or (at least for an oral stage) a certain Simon, a cobbler from the Athenian agora (D.L. 2.123). For a full discussion, see Rutherford 1995: 11 and Clay 1994: 32–3.

they would eventually start to practise such activities in a written form, possibly publishing these materials only after his death (Rossetti 1991). An immediate literary point of reference would have been provided by Attic comedy, which already featured Socrates himself among its characters. In the passage referred to above, Aristotle mentions Sicilian mime as a similar genre to the *Sokratikoi logoi*. There is no evidence that Sicilian mime circulated in Athens. Duris of Samos maintains that Plato was well acquainted with Sophron's works in particular (*FHG* II.482 fr. 45).[37] If this is true, Plato might first have accessed them during his visits to Syracuse, which did not start until 388/7. This makes it chronologically implausible for Sicilian mime to have contributed to the birth and early development of the Socratic dialogue (see Wolfsdorf 1998: 126, n. 2 for a full discussion; cf. Rutherford 1995: 12). On the other hand, interesting similarities have been pointed out between the more elaborate Socratic dialogues and the light-touch, historical-anecdotal *Epidemiai* of Ion of Chios (see Hobden 2005: 97, Rutherford 1995: 13–14).

Arguably, the primary function of the Socratic texts was that of fictionalized historical memorials, or protreptics (Clay 1994: 25–8 and 42). The effective representation of the 'Socratic way' mattered more than biographical accuracy. Not all of the Socratics were systematic teachers, and it would perhaps be too speculative to consider their works as teaching materials. It seems quite clear, however, that they were at least conceived with some didactic intentions. These remarks also apply to the Socratic works of Xenophon, which, just like his historical works, mainly aim at a public of non-specialists (see Waterfield 2004, Johnson 2005: 39, Hobden 2005, and Gray 1992: 60). The nature and function of the Platonic dialogues seem quite different and have been widely debated. The question can roughly be summarized thus: was Plato trying to present his own doctrine through some spokesman (possibly Socrates, cf. Rowe 2007: 15 and 32), or was he trying to entice the receivers of his text into thinking 'philosophically'[38] by avoiding dogmatism and drawing in 'the reader as a participant in the discussion', as well as creating a

[37] Clay (1994: 36–7) considers this claim a hostile attempt to bring Plato 'down to earth'.

[38] See for instance Frede 1992, Sayre 2002, Mittelstrass 2002, Cerri 1991: 128 who argues that Plato's books were conceived as *ὑπομνήματα*.

compelling image of philosophy 'as a product of particular human beings located in time and space', as Blondell argues?[39]

On the whole, it can be argued that the audience and modes of reception of the non-Academic Socratic literature would be analogous to that of historiography: private *anagnosis* by an interested readership. As to Plato's dialogues, several scholars have argued, also on the grounds of the account of Diogenes Laertius (3.35–7), that they were read aloud in the Academy (most probably by a single reader, cf. de Vries 1984 and Blondell 2002: 24) as a prompt for discussion[40]—a private performance of a scripture (cf. Allan 1980: 249, Usener 1994: 207–29, Ausland 1997: 386–7, Moors 1978: 77, Morrison 2007: 222, Collins 2012). In his controversial and highly speculative account, Ryle (1966: 21–54) argues for the diversified destination of the dialogues, which would even include Plato's own recitation of some of them at Greek festivals (see Blondell 2002: 25–6 for counterarguments). On this point, Kahn (1996: 381 and 2003b: 160) suggests that the more 'literary' dialogues might have been conceived as 'teasers' for a broader audience, which would point to private readership. Antigonus of Carystus (D.L. 3.66), however, reports that, in the late fourth century, editions of Plato could be consulted only for money, which would mean that they were not on the market, and that their circulation was restricted to the Academy and its members (see van Groningen 1963: 8–10). At any rate, the possibility that different groups of dialogues were composed for different audiences (the Academicians and/or the educated elite) is at least conceivable; in Blondell's words (2002: 7), we cannot 'overlook the more general fact that each was in fact composed in a particular situation, for particular purposes, and at a particular point during an extended period of time in which the author's intellectual and pedagogical concerns are likely to have varied considerably'.

The nature of the works of Aristotle as written texts is far less controversial: scholars generally regard the extant ones as unpublished technical compositions used for lecturing in the Lyceum

[39] Blondell 2002: 37–52; quotations from pages 39 and 48.

[40] Rossetti (1991: 29) maintains that the 'conative' features of the dialogues (such as the large number of vocatives) would well suit a plurality of readers, and he also argues that more than one copy might have been used in a dramatized reading of this kind. I find the latter argument unsustainable, and I agree with Usener (1994: 210–11), who interprets the same stylistic features of the dialogues in exactly the opposite direction.

(Tarán and Gutas 2012: 13 and 21–2).[41] At least some of these texts look like polished lecture notes meant for oral presentation, rather than raw transcriptions or drafts (see van der Eijk 1997: 92 and 118, Tarán and Gutas 2012: 21–2, Schütrumpf 1989, and Föllinger 1993). As Tarán (in Tarán and Gutas 2012: 21–4) argues, these texts were also written down and preserved to be consulted by both Aristotle and his students, who could probably make copies for their own use.

3.4.3 Oratory

By definition, oratory is an oral genre, or at least, it originated as such. Speeches were central to political life and decision-making, as well as to the administration of justice. The functioning of a democratic *polis* like Athens had public 'pragmatic' oratory at its core from the very beginning, well before speech writing became common practice.[42] As we have seen, this happened around the age of the sophists. Written composition was not at all new for display literature, if we include under this label 'public' poetry (for instance, choruses and drama) and prose *epideixeis*. The sophists, for their part, conceived of eloquence as a teachable skill and gave away written copies of their speeches as didactic materials. As such, these started circulating as scriptures in their own right. At this stage, the extension of written composition to traditional 'pragmatic' oratory was an innovation and it certainly encouraged the subsequent written circulation of some forensic and deliberative speeches; improvisation (*αὐτοσχεδιασμός*), however, was still practised in the fourth century (Isoc. 13.9, cf. also Pl. *Mnx* 235c–d, 236b).[43] Paid legal advocacy was banned in Athens,

[41] A possible exception is the *Constitution of the Athenians*, which is only transmitted in papyri and may be regarded as a relatively raw collection of data; cf. Tarán and Gutas 2012: 13, n. 57.

[42] Cf. Nicolai 2004: 15. According to the *Suda* (s.v. *Περικλῆς*), Pericles was the first orator to have delivered a speech written in advance in a lawcourt. See Hansen 1991: 12 and 305–6, MacDowell 2009: 1–2.

[43] MacDowell (2009: 5–6) argues that most would-be deliberative speakers would find it 'impracticable to write their speeches beforehand', and he agrees with Trevett (1996b: 441) on the fact that Demosthenes did so only at the onset of his career, 'when he had less confidence in his ability to extemporize'. The question of improvisation and its possible traces in Attic oratory has been explored in a plethora of articles and short notes by Dorjahn, both on his own (1947, 1950, 1952, 1955, 1957) and with Fairchild (1966, 1967, 1970, 1972a, b). The evidence from Plato's *Menexenus* must be taken with a grain of salt. This work is notorious for its anachronism—a passage at

and by the turn of the fourth century writing speeches[44] for prosecutors/defendants and their *synegoroi* to deliver (cf. Rubinstein 2000: 13–15 and 61) emerged as a profession (*logographos*),[45] and a much despised one (see Pl. *Phdr*. 257c, D. 19.246 and 250, Aeschin. 1.94, 2.180, and 3.173, Din. 1.3, and Antipho fr. 3 Gernet 1.11–13; cf. Pearson 1939: 6–7 and Carey and Reid 1985: 16–17). Written texts, however, would not normally be held in the hand by public 'pragmatic' speakers as they were performed: as we have seen (1.1), good orators were supposed to conceal the preparedness of their speech altogether, and such texts can be considered pure scripts for public performance. Ideally, speakers would learn their speech by heart and try to preserve the exact wording (cf. Cooper 2004: 149–50 and Vatri 2015a: 770–1).[46] It is unlikely, however, that they consistently succeeded in doing so. Moreover, the background of an experienced orator must have included the ability to speak extempore. More often than not, dealing with the situation at hand and with the opponent's reaction must have required good improvisatory skills (cf. Dover 1968: 150, n. 4, MacDowell 1990: 27–8, MacDowell 2000: 23, MacDowell 2009: 3, and Schloemann 2002).

The forensic and deliberative speeches that we read today are written texts that must have been put into circulation by somebody at some point. The oldest speeches that we possess—those of Antiphon—date to the 410s. Lysias was active in the first two decades of the fourth century, and Isocrates' production started in the same period. The majority of the surviving speeches of the Attic orators, however, were composed between 355 and 322 (cf. Dover 1950 and Hansen 1991: 13). It is hard to establish whether the speeches were published by their authors or by someone else, and the question why forensic and deliberative speeches were published as written texts at

245c–d clearly alludes to the peace of Antalcidas, which dates to 387, well beyond the lifetime of both Socrates and, most probably, Aspasia (cf. Todd 2007: 152, n. 15).

[44] Or what Dover (1968: 150) calls 'consultancy': a 'consultant' could either 'compose a complete speech for the litigant' or 'instruct the litigant in the presentation of the case, either in broad outline [. . .] or in detail, with suggestions for the precise wording of whole sections of the speech'. Dover's ideas on composite authorship have not met with general acceptance; see Worthington 1993, Whitehead 2004: 156, Usher 1976, and MacDowell 2009: 4 with further references.

[45] On the term *logographos* see Lavency 1964: 36–45.

[46] According to Lavency (1964: 184–9) occasional speakers (such as the clients of the logographers) could in principle have read aloud a written copy of their speech.

all is not trivial. As a general principle, it must be borne in mind that each surviving speech may have an early history of its own, independent of that of other speeches of the same author. Therefore, such questions ought to be addressed for each text individually (cf. Nicolai 2004: 19 and MacDowell 2009: 8 on the judicial speeches of Demosthenes).

Not all forensic and deliberative speeches were composed for specific occasions or actual public delivery. By the end of the fifth century the practice of writing fictional speeches as models for students or as more or less veiled political pamphlets had established itself. Speeches in Ionian and Thucydidean historiography represent both an immediate precedent and a contemporary correlate to such fictional oratory (cf. Nicolai 2004: 85–7). For a start, they are not faithful transcriptions of the ones that were actually delivered, if they were delivered at all.[47] This does not even apply to those which we can assume the writers themselves witnessed, as Thucydides confesses (1.22). The historian's effort would consist of preserving the general sense of the actual speeches (*ἔχεσθαι τῆς ξυμπάσης γνώμης τῶν ἀληθῶς λεχθέντων*), both those he had personally attended and those he had only heard reports of (cf. West 1973). The rhetorical features of such speeches, which include the speaker's *ethos*, would all be the historian's own (while being different from those of the narrative frame: Scardino 2007: 453–64). Moreover, they would be tailored for the *historian's* own audience, rather than for that of the speaking character alone (cf. Hornblower 1987: 45–72), if at all (see Cole 1991: 105–6 on the 'undeliverability' of Thucydidean speeches).[48] This applies all the more to Xenophon, the accuracy and even the historicity of whose speeches is anything but a certainty (Delebecque 1957: 97, 264 and 271; cf. de Strycker and Slings 1994: 2–3).

The earliest fictional forensic speeches that we have are the *Tetralogies* traditionally (and most likely correctly) attributed to Antiphon,

[47] Hansen (1993: 179), for instance, argues that battlefield harangues are literary inventions and the result of a 'stylized transformation of history into rhetoric'. For a lengthy response to this view see Pritchett 2002; cf. Yellin 2008: 22–3. For a detailed discussion of battlefield rhetoric see Iglesias Zoido 2007 and Yellin 2008. On the Homerizing character of the speeches in Herodotus see Boedeker 2002: 104–6.

[48] On *ethopoeia* in Thucydides see also Tompkins 1972. On the function and purposes of speeches in Thucydides see, among others, Yunis 2003b: 201–4 and Scardino 2007: 700–2.

which consist of three groups of two prosecution plus two defence speeches for imaginary homicide cases, most likely dating back to the last quarter of the fifth century. According to Gagarin (2002: 54–9), the *Tetralogies* can still be considered an instance of sophistic *antilogiai* rather than model speeches aimed at teaching courtroom techniques. The intended audience would still be one of students and intellectuals interested in broadly-defined intellectual training rather than one of would-be forensic speakers. The Ionic flavour of their prose matches such an intellectual character, and fits the hypothesis that the intended audience was an 'international' one, since Ionic would still be the standard language of prose outside Athens (cf. Usher 1999: 6 and 355–9). As to their intended mode of reception, the *Tetralogies* were most likely conceived as scriptures for private *anagnosis*.

Another significant category of fictional forensic speeches is that concerned with the trial of Socrates, which includes a significant number of works that can be dated to the decades between 395 and 375. Apart from those of Plato and Xenophon, *Apologies of Socrates* are said to have been written by Lysias and Theodectes of Phaselis,[49] but still others could have existed (cf. X. *Ap.* 1; see Usher 1976: 35–6). A famous *Accusation of Socrates* was written by the Athenian sophist Polycrates, a teacher of rhetoric who was well known for his paradoxical *paignia* (see Isoc. 11.4 and D.H. *Is.* 20). It is likely that the *Accusation* itself was a work of this type, despite the Hellenistic rumour that it corresponded to the actual prosecution speech pronounced at court (cf. Livingstone 2001: 28–40, with further references). This work was a representative of the sophistic custom of writing imaginary speeches related to occasions belonging to the historical or mythological past[50] (cf. Dover 1968: 190–1 and Usher 1999: 4–5) and must have been conceived primarily as a script for epideictic performance. A more serious *Apology* like that written by Plato drew on the same tradition. However, concerned as it was with philosophical and political issues, it must have circulated primarily as a written scripture for private performance (cf. Usener 2003), for both didactic and 'promotional' purposes (cf. de Strycker and Slings 1994: 8–16), and was probably intended, as Rowe (2007: 80–7) maintains, for a much wider audience than Plato's dialogues.

[49] See de Strycker and Slings 1994: 4, n. 7.
[50] These include, for instance, Gorgias' *Helen* or the *Defence of Palamedes*.

A number of extant epideictic speeches are (often fictionally) connected to specific occasions. These include Lysias' *Olympic speech* (Lys. 33), which was seemingly delivered at the Olympic Games of 384 BC (see Gigante 1960: 378, cf. Todd 2000: 331–2), and the small but important corpus of Athenian funeral speeches, which counts six texts. As Canfora remarks (2011: 70–1, 2014a: 81–2), this corpus roughly corresponds to the canon known to early imperial rhetoricians, and it would seem that the six speeches that we possess are virtually all that was deemed worth preserving relatively early in the tradition—if not all that was committed to writing to begin with.

The speeches of Pericles (Th. 2.35–46) and Aspasia (Pl. *Mnx.* 236d–249c) are embedded in non-oratorical works; unlike the former, the latter makes no claim to historicity and is notorious for its anachronisms (see n. 43). This, combined with the rather dismissive remarks on funeral speeches as a genre at the beginning of the dialogue (235d–e), supports the view that the speech is a literary *divertissement* (Todd 2007: 154, n. 21 with further references) with serious intentions (see especially Kahn 1963 and Coventry 1989)—a parody of and a reflection on Pericles through a 'Periclean' *epitaphios* (Canfora 2011: 74).[51] The *epitaphios* of Gorgias, besides being fragmentary, is a literary exercise (DK82 B5–6). Similarly, it is very unlikely that that of Lysias for the dead of the Corinthian War was composed to be delivered on the purported occasion (cf. Todd 2007: 151–2, 163–4, Petruzziello 2009: 108–11).[52] Furthermore, both Gorgias and Lysias (if his funeral oration is authentic) were metics and virtually ineligible to speak publicly on such official occasions (cf. Loraux 1986: 9, Kennedy 1963: 156, Dover 1968: 193, Todd 2007: 163, Carey 2007: 242, Canfora 2011: 74); both speeches would likely have been composed to circulate in writing and for private *anagnosis*.

Only two of the extant *epitaphioi* would have been composed for a real occasion, that of Demosthenes for the fallen at Chaeronea in 338 and that of Hyperides for the dead of the Lamian War (preserved only by a papyrus). Demosthenes did deliver a funeral speech on that occasion, but the authenticity of the one preserved in the corpus

[51] The *Menexenus* must have been taken seriously in antiquity, if we can trust Cicero's report (*Orat.* 151) that an oration of Plato was used every year in Athens to praise publicly those fallen on battlefields—he cannot be alluding to anything other than the speech from this dialogue.

[52] Canfora (2011: 74–7) expounds the view that Lysias' funeral speech was a political pamphlet.

has been questioned ever since Dionysius of Halicarnassus (*Dem.* 44). A number of modern scholars regard the speech as authentic (see MacDowell 2009: 376–7 and Petruzziello 2009: 213–15 for reviews of the debate; cf. also Worthington 2003 and Usher 1999: 351). Canfora (2011, 2014a), however, rejects this based on his pessimistic outlook on funeral oratory as a genre. Funeral speeches may have represented an ephemeral and clichéd paraliterary genre (Canfora 2011: 70–1), one—we may add—in which 'the personality of the orator has to yield to the impersonality of the genre' (Loraux 1986: 11) but that would still be part of the training and repertoire of 'anyone interested and skilled in oratory' (Dover 1968: 193). On these grounds, Canfora raises the legitimate question of why the likes of Demosthenes and Hyperides would have needed to compose and preserve in writing orations of such a trivial kind. Carey (2007: 242), too, holds a sceptical view as to the authenticity of the *epitaphios* of Demosthenes, but underlines the originality of that of Hyperides (2007: 244–5), which he regards as the only 'unambiguously genuine (in the dual sense that it was written by its putative author and for its avowed context) example' of Athenian funeral oration (2007: 242, cf. Todd 2007: 151).

Fictional speeches set in the mythical past were also written by Isocrates (*Helen*, *Busiris*). Isocrates' epideictic and deliberative speeches were never delivered in public but were the product of his academic activity (cf. Nicolai 2004: 135–42). Isocrates himself confesses his inability to speak in public and that he deliberately chose writing as a medium (12.9–11, 5.81). For instance, he explicitly refers to readers—or, rather, perusers (*διεξιόντες*, cf. Cavallo and Chartier 1999: 9)—as the audience of the *Antidosis* (Isoc. 15.12) and mentions the possibility of (physically) distributing the *Panathenaicus* to people who might wish to receive it (*διαδιδόναι τοῖς βουλομένοις λαμβάνειν*, Isoc. 12.262; cf. Pinto 2003: 154 and Nicolai 2004: 139). His speeches, however, were not conceived as a form of entertainment. In general, they were concerned with serious issues and were ultimately meant to have an indirect impact on Athenian politics in the long run by influencing the moral thinking of the readers (cf. Nicolai 2004: 131–5, Usher 1999: 297–8, and Pownall 2007: 240 on the 'pragmatic' morals of Isocrates). In this perspective, Isocrates' choice of writing and his decision to withhold from public speaking may be interpreted as factors which enabled him both to circulate minority views without having to face potentially hostile audiences (cf. Thomas 2003: 186–7, cf. Pownall 2007: 246) and, as Nicolai (2004: 53–4) argues, to develop

an experimental type of prose which blended didactic and political purposes.

The circumstances of the composition and reception of Isocrates' epideictic and deliberative speeches should not differ from those described in the section of the *Panathenaicus* discussed at 3.1 above (200–33, cf. also 5.2–7 and 7.56–7)— in Usher's words (1999: 297), such speeches 'were probably read at leisure [...] by pupils, ex-pupils, potential pupils, and others with an interest in political debate' (cf. Usener 2003: 21). Reading could, and would, still be oral and collective, as we have seen (1.3 and 3.1; cf. Hudson-Williams 1949: 66), and as Isocrates' care for the aural features of his speeches indicates (cf. for instance Bons 1993: 165 and Usener 1994: 70–1). Allusions to large-scale public situations in which a number of speeches (e.g. the *Panegyricus*, the *Antidosis*, or the *Panathenaicus*) were to be delivered should be interpreted as fictitious—an instance of the literary custom of creating a dramatic setting (cf. Nicolai 2004: 24–6 and Hudson-Williams 1949: 68)—and we can regard this part of his production as consisting of scriptures for private performance which never went through the stage of scripts. In-house *anagnosis*, on the other hand, could be characterized by different degrees of formality. If we believe that, for instance, the *Philip* was actually (meant to be) read to an audience which included, but was not limited, to the king (if we may so interpret the expression *ἵνα δηλώσω καὶ σοὶ καὶ τοῖς ἄλλοις*, Isoc. 5.1), the reception scenario for a speech of this kind would conceivably correspond to that of in-house formal *epideixeis* (cf. Hudson-Williams 1949: 67). By the definition given in 2.3, these may be identified as public situations in which written texts serve as scripts. However, the possibility that formal performances of such speeches were actually held at the court of the speeches' royal addressees is a remote one (see Nicolai 2004: 144 on the *Nicocles* and cf. Usher 1999: 305 on the *Philip*). At any rate, as Usener (2003: 22) points out, the ultimate audience for speeches addressed to an individual public figure would still correspond to the 'unknown readers' in whose hands written texts could fall.

Isocrates also wrote forensic speeches which may all be assigned to his early years: *Against Euthynus*, *Against Callimachus, On the Team of Horses*, *Trapeziticus*, *Aegineticus*, and *Against Lochites*. It has been argued that at the onset of his career Isocrates was forced to earn a living as a logographer (Usher 1999: 118–26 and Whitehead 2004: 161). Later on, Isocrates explicitly disdained this type of oratory

(15.3, 27, 42, 144, 228, 238, and 276; 10.7; 12.11 and 240; cf. Whitehead 2004: 152–4 and Usher 2004: 115). According to Dionysius of Halicarnassus (*Isoc.* 18), his adoptive son Aphareus denied that he ever wrote speeches for the tribunal, while Aristotle asserted that copies were sold in bundles in his own time (Arist. fr. 140 Rose). Dionysius is not convinced by the testimony of Aphareus—his rebuttal would be part of the defence strategy in the *antidosis* affair, at the trial of which he had to speak for his adoptive father. On the other hand, Dionysius suspects that Aristotle wished to discredit Isocrates (as a logographer) but ends up accepting the testimony of Cephisodorus, a student of Isocrates, who confirmed that his teacher did write a small number of forensic speeches. Modern scholarship has produced no strong arguments against their authenticity (cf. Cloché 1963: 9), even though it has been argued that some of these speeches are abridged (for instance, the *Against Euthynus*; see Mathieu and Brémond 1928: 4–5) if not mutilated (*On the Team of Horses* and *Against Lochites*; see Nicolai 2004: 158–9) and that not all of them were written for actual clients. Wilamowitz (1920 II: 107–8), for instance, regards some as fictional promotional speeches, others as the works of a political publicist or as purely literary exercises. He also claims that the speech *Against Callimachus* was a real forensic speech that was published by the client himself. As Nicolai (2004: 105–7) points out, the history of the manuscript tradition seems to prove that the Isocratean corpus took shape at a very early date, which implies that the writer himself, or at least his school, had direct control of the early publication of all works. Nicolai (2004: 158–61) also accepts the idea that the incomplete speeches are the result of a deliberate selection executed by Isocrates and his school (cf. Mathieu and Brémond 1928: 37–8, Cloché 1963: 26, and Pinto 2003: 157). As a consequence, he regards Isocrates' forensic production as didactic materials, that is, as fictional speeches which he wrote following the common practice in rhetorical teaching about the turn of the fourth century before developing a pedagogy of his own. In this light, one may conjecture how both Aristotle's witness and Aphareus' overstatement that Isocrates never produced any forensic speeches for actual use in the lawcourt could sound plausible to contemporary observers. We can assume, with Nicolai (2004: 107), that Isocrates, while generally despising forensic oratory, did not disown his own, nor did he oppose the unauthorized circulation of some version of his early works (it would have been impossible to withdraw a book from the

market anyway), even though they were quite removed from his later educational system (cf. Whitehead 2004: 160). It is conceivable that Isocrates preserved and edited[53] his early forensic speeches—which might also have been composed for real cases—exclusively for personal[54] and classroom use as an inventory of arguments and *rhetorical* (not necessarily *forensic*) techniques. He would use them for decades denying that he ever wrote them for real cases (that is, for money) and without ever publishing them; all in all, Isocrates started publishing his works only late in life (see Usher 1973: 60). Now, the latest speech of this group, the *Aegineticus*, dates to about 390 BC. At Isocrates' death fifty-two years later his heirs might have released them into the book market, which would account for their editorial polish as well as their early inclusion into the Isocratean corpus. At that point in time, it would not matter whether they had ever been used in an actual lawcourt,[55] which would have happened when such hypothetical early 'editors' were children, if they had already been born at all; whether Cephisodorus knew better is a different question, which could be addressed if we possessed more accurate information on his chronology. This admittedly speculative scenario would also square well with the testimony of Aristotle, who outlived Isocrates by fifteen years, if we accept that Aristotle believed in the authenticity of such texts, which is not to be taken for granted (cf. Dover 1968: 25).

In general, written copies of judicial speeches composed for real trials derived more or less directly from the text that the orator prepared before the trial for himself or his client to memorize and recite. Copies that were sold on the book market—whether or not on the author's initiative (cf. Canfora 1974: 67 and Usher 1976: 37–8)—would plausibly target four categories of readers identified by Dover (1968: 170–1): the partisan ('the man actively committed to politics as

[53] This could be an alternative explanation of the epideictic character of the speech *On the Team of Horses*, as identified by Usher (1973: 49) through stylometric analysis (with Usher ascribing it to an early evolution of Isocrates' style).

[54] Whitehead (2004: 167) illustrates Isocrates' reuse of materials from his forensic speeches in his later production (which excludes verbatim quotations, see Nicolai 2004: 105) and provides (180–1, n. 97) an extensive list of 'apparently conscious repetitions and reworkings'.

[55] The interest in the actual trials would likely have faded by then; cf. Nicolai 2004: 159.

an associate of one or other of the parties to a lawsuit'), the floating voter ('the man [. . .] whose allegiance can be determined, at least temporarily, by the impact of rhetoric'), the would-be politician ('that is to say, at Athens, the young man [. . .] who knows that to become influential he must be a persuasive speaker'), and the connoisseur ('the man who enjoys oratory as an art form'). Partisans and floating voters would be interested only in lawcourt speeches that had some political significance, whereas would-be politicians, for their part, would be after model speeches. As Usher (2004) suggests, the existence of a readership of connoisseurs would square well with the Athenian passion for trials (*φιλοδικεῖν*) hinted at in fifth-century sources (e.g. Th. 1.77 and Aristophanes' *Wasps*).

A difficult question concerning the text of forensic speeches is that of the extent of correspondence between the extant written versions and what was spoken in the tribunal—a question raised by both ancient and modern commentators (see Nicolai 2004: 17–20). An illustrative example of the complexity of this issue is the debate concerning Lysias' *On the Murder of Eratosthenes*. This speech may be regarded as a borderline epideictic piece that could well target an audience of leisurely readers, and which might have been revised for commercial (and promotional) publication as a *paignion*.[56] Porter (2007, first published in 1997) regards this speech as an entirely fictional display speech. The theme (adultery) is intrinsically entertaining; the narrative is well designed and includes stock elements typical of stories of seduction and illicit love. The speech is too brief and lacks the details we would expect in a forensic one. Moreover, according to Porter, the names of the protagonists are too transparent and rare in Attica to be real: the defendant—a cuckold—is called Euphiletus, 'Beloved', whereas the murdered adulterer is called Eratosthenes, 'Vigorous-in-love'. Based on such arguments, Porter thinks that *On the Murder of Eratosthenes* was just a rhetorical exercise, an epideictic speech which was intended as a form of popular entertainment and to promote the author as a professional logographer. Porter's points are not unassailable. A short and entertaining narrative could have been appreciated by the judges (cf. Ar. *V.* 776–8), and the comedic traits in Euphiletus' character may be interpreted as part of Lysias'

[56] Usher (1999: 106–10) makes a similar claim as regards Lysias' *For the Invalid* (but cf. Dover 1968: 189).

actual rhetorical strategy. In theory, the law was on Euphiletus' side: red-handed adulterers could be killed, even though this would hardly ever happen and the matter would usually be settled through financial compensation (see Todd 2007: 49–51). The whole point of the trial was to establish whether Euphiletus plotted against Eratosthenes for some other reason and whether he enticed him into his house in order to make his murder appear lawful (cf. Carey 1989: 64). In this perspective, Euphiletus' characterization as a naïve comedic cuckold might have been instrumental to his case. Furthermore, Porter's prosopographical arguments are challenged by Todd (2007: 56–60), who provides a plausible reconstruction of both protagonists' social status and their possible connections with Lysias. Usher (2004: 118–20) regards Porter's conclusion as 'rather extreme' but accepts the suggestion that this (and possibly other) speeches of Lysias were heavily revised for written publication for the purposes identified by Porter. The idea of a revision was already explored by Dover (1968: 188), who points out that Euphiletus should have offered his slave—a central figure in the case—for torture, but information about this is completely omitted. This, Dover argues, raises the suspicion that the speech was reworked significantly for written publication. Carey (1989: 63) finds this omission odd as well, but he explains it as part of the defendant's strategy. The purpose of offering a slave for examination under torture was to test the opponent's faith in his own case; if the opponent rejected the offer, it would follow that he had something to hide. If it was Euphiletus who had something to hide, it would not have been a good idea for him to make the offer or to bring up the issue altogether—it would probably be his opponent who would demand that the slave be questioned. To sum up, it is plausible that *On the Murder of Eratosthenes* was composed for a real trial, and there is no conclusive evidence that it was substantially reworked for written publication.

On the whole, written circulation does not automatically imply substantial revision. It remains conceivable, however, that this would have been an attractive option for orators who wished to circulate speeches on matters of political relevance, after delivering them, in order to 'set the record straight' and 'get the last word', as Hubbard (2008: 187) puts it (cf. also Worthington 1991a: 64). Arguments that are commonly adduced to prove that the text was substantially revised include its excessive size and the anticipation of the opponent's points (so for instance in Hubbard 2008; cf. Worthington 1991a: 58).

As to the length of a speech, the correct assessment of the suitability for delivery in an actual tribunal depends on the calculation of the maximum allotted time for the speaker. The time allowed for speeches was measured through a water-clock (*klepsydra*). Aristotle's *Constitution of the Athenians* (67.2) reports that speeches for private suits were allowed different lengths of time according to the monetary value at stake (see Rhodes 1981: 719–28 for a detailed discussion). These ranged between as little as 5 *choes* and as much as 10 *choes*. Archaeologists have unearthed a late-fifth-century *klepsydra* holding two *choes*, and have calculated that it empties in about six minutes (Rhodes 1981: 720). A *chous* would therefore correspond to three minutes' worth of water, though the hole through which the extant *klepsydra* empties could have increased in diameter through corrosion and the speed of the water flow may have slightly increased (Lang 1995: 77). Speeches of private cases, as a consequence, probably had to be delivered in between 15 and 30 minutes (or slightly longer); when supporting materials (laws, testimonies, etc.) were read out by the clerk, the *klepsydra* was stopped (Arist. *Ath*. 67.3). This means that, for instance, a speech like Isocrates' *Trapeziticus*, whose monetary stake was rather high (cf. Keil 1902: 261, Rome 1952: 603), would probably have been assigned up to 10 *choes* (at least 30 minutes); if we were to calculate the slowest rate at which the orator would have needed to speak in order to deliver the whole of the surviving text in that amount of time, this would correspond to about 4.17 syllables per second (the text totals 7,501 syllables).[57] The first speech *Against Aphobus*, which was delivered by Demosthenes at a trial of the same category (cf. Rome 1952: 605), totals 10,109 syllables and would have been spoken in the surviving form at the rate of 5.62 syllables/second, a faster pace than that of Isocrates' client. Other private Demosthenic speeches would have required an even higher speech rate. One such case is the first speech *Against Stephanus*,

[57] The number of syllables in this and other texts has been calculated by counting vowels and diphthongs in the *TLG* digital texts (http://stephanus.tlg.uci.edu/). Of course, vowels in diphthongs have been counted only once (that is, they have not been included in the count of simple vowels). The usual indications (*lemmata*) for the location of supporting materials (*ψήφισμα*, *μάρτυρες*, *ἐπιστολή*, etc.) have been excluded from the counts. Syllables/second is a far more accurate unit of measurement for speech rate than words/minute and is the standard one in experimental phonetics (cf. Fletcher 2010: 570).

written for Apollodorus and totalling 11,314 syllables.[58] The sum at stake in this trial amounted to one talent (cf. Keil 1902: 247) and the speaker would have had up to 10 *choes* at his disposal, which means that the speech would have been delivered at the rate of 6.28 syllables/second. Interestingly, in section 47 the speaker complains about the time restriction, a common forensic topos also found in fictional speeches (e.g. Isoc. 15.54; see Bers 2009: 54–5 and Mariß 2002: 167), but which does not seem out of place in a speech that would have been delivered at a relatively hasty pace. It is quite telling that the *Against Timotheus* (D. 49), another speech delivered and probably composed by Apollodorus (see Trevett 1992: 73–4), is the private forensic oration which would have required the highest speech rate in delivery, as far as we can tell (see the table at Keil 1902: 247–8). The sum at stake in the trial amounted to 4,338 drachmae and 3 obols, and speakers would have been allotted 7 *choes* (21 minutes). The speech totals 9,635 syllables, which gives a minimum speech rate of 7.65 syllables/second.

The difficulty of assessing the monetary values at stake in each trail makes it virtually impossible to calculate the allotted time for many extant speeches without resorting to guesswork (cf. Rome 1952: 602 on Lysias).[59] This task is further complicated by the fact that *synegoriai* would need to be delivered in the allotted time for each party and eroded the time at the main litigant's disposal—the *klepsydra* would be stopped neither in public nor in private lawsuits (cf. Rubinstein 2000: 71, n. 141, Keil 1902: 241, Rome 1952: 600). No fewer than twenty-five of the extant Attic forensic speeches are *synegoriai* (Rubinstein 2000: 25–41, 61), and we may only speculate as to how much time their speakers would have had. On a related point, only if we take it for granted that the transmitted text corresponds faithfully enough to what was delivered in the tribunal can we conclude that speeches for which a high speech rate may be calculated—and that offer no indication of having being delivered in the same time allotment as another speech—were indeed delivered in single-speaker sessions. But since such a correspondence is precisely the *demonstrandum*, the

[58] Neither Rome's count nor mine includes the texts of depositions and laws embedded in this speech, as the water-clock was stopped as they were read out (whether or not these texts are authentic, see Canfora 1974: 94–5).

[59] Rome (1952: 603) regards this strategy as potentially counterproductive for professional speechwriters, for a defeat in the trial could easily have been imputed to an audacious use of the allotted time.

reasoning leading to this conclusion must be rejected as circular. Another element of uncertainty in the calculation of speech rates is the trivial fact that speakers might decide to use less time than allotted, and may stress this point explicitly as part of their rhetorical strategy (e.g. D. 36.62, Is. 7.45; see Rome 1952: 607 and Lavency 1964: 192). In general, it is safe to take the speech rates calculated here only as low estimates—as the slowest possible pace at which each speech could have been delivered without exceeding the allotted time.

Public cases, which might result in the infliction of very serious penalties (death, exile, confiscation of property, etc.), were allotted an entire judicial day, whose duration was made to correspond to that of the shortest days of the year (Arist. *Ath.* 67.4–5, Rhodes 1981: 726). The judicial day (*diamemetremene*, Aeschin. 2.126) was divided into three parts (X. *HG* 1.7.23, Aeschin. 3.197–8); the prosecutor and the defendant were given the same amount of time (Arist. *Ath.* 67.3). Aeschines (2.126) informs us that the discussion of the case was allotted as many as 11 *amphoreis*. The *amphoreus* as a unit of measurement presumably corresponded to a multiple of the *chous* (cf. [D.] 43.8–9). Literary (Theopomp.Hist. *FGrHist* 115 F405; cf. Chantraine 1963: 668) and archaeological evidence (Lang 1952: 26, n. 1) point to the equivalence of an Attic *amphoreus* to the *metretes*, a unit of measurement that corresponded to 12 *choes*.[60] On this basis, an *amphoreus* would amount to 36 minutes, and the length of time indicated by Aeschines corresponds to 396 minutes, that is, 6 hours and 36 minutes. If such was the duration of the judicial day, a speaker would be allowed at most only one third of this length of time (132 minutes). A speech such as Demosthenes' *On the False Embassy*, the longest extant non-fictional Attic oration totalling 48,976 syllables, would have been delivered at a relatively fast pace—faster than the 6.18 syllables/second which the speech alone would take, if one takes into account the readings of supporting materials, for which the *klepsydra* was not stopped. Such materials consist of at least thirty-nine items: three groups of depositions (sections 130, 146, and 162), seven single (32, 162, 165, 168, 176, 214, and 236) and two multiple written depositions (170, 200), at least six letters (39, 70 × 2, 161, and

[60] Actual amphorae—as opposed to the *amphoreus* as a unit of measurement equivalent to the *metretes*—in use in Athens were remarkably smaller, however; cf. Lang 1956: 3, Wallace 1986: 88. Cf. also Pritchett 1956: 195–6.

187 more than one), one excerpt from a letter (41), one preliminary decree (32), twelve decrees (48, 86, 87, 130, 155, 161 × 3, 267, 276, 286, 270), three treaties and resolutions (61, 62, and 63), a curse (70), two long poetic quotations (a passage of Sophocles' *Antigone* at 247 and Solon's *Eunomia* at 255), both fully reported in the text (and included in the syllable count), and an undefined number of oracular verses (297). On these grounds, MacDowell (2000: 23, cf. also Colin 1917: 72–3) argues that 'no one could deliver audibly in a couple of hours the whole of the surviving text of the *Embassy* speech, while still leaving enough time for the clerk of the court to read out the various documents that Demosthenes requests'. In MacDowell's opinion, the text of this speech does not correspond to what Demosthenes actually delivered, which would leave us with two options (2000: 24): 'if [the speech] was written before [the trial], Demosthenes prepared more material than he needed, and in court he delivered only as much of it as he had time for. If it was written (or revised) afterwards, he has added for readers material which was not spoken in court.' However, a revised calculation of the time allowed for each speaker in a public trial suggests that we should not draw such a pessimistic conclusion. The length of the shortest day of the year in Athens has been calculated to correspond to about 9 hours and 28 minutes (cf. Keil 1902: 255), far longer than the duration of 11 *amphoreis* mentioned by Aeschines. Rubinstein (2000: 35, n. 33) argues that Aeschines was referring to the time allotted to the prosecution and defence speeches, which amounts to two-thirds of the judicial day. The entire judicial day would amount to 16.5 *amphoreis*, that is, to 9 hours and 54 minutes, which confirms that Rubinstein's interpretation is most likely to be correct. If a speech like *On the False Embassy* was allotted 5.5 *amphoreis* (3 hours and 18 minutes; cf. also Hansen 1991: 200),[61] it could have been pronounced at the rate of 4.12 syllables/second, virtually the same pace as that calculated for Isocrates' *Trapeziticus*. At a speech rate of 5.62 syllables/second—the same as the *Against Aphobus*—the text of *On the False Embassy* could have been delivered in about 145 minutes (2 hours and 25 minutes), which would leave slightly more than 50 minutes for the clerk to read the supporting material.

[61] Curiously, Rome (1952: 598) reaches the same conclusion but ignores the evidence from Aeschines.

Now, the idea that the text of certain speeches is too long to correspond to what was delivered orally rests on the assumption that the speech rate inferable for such speeches is too high to have been plausibly adopted by the speaker—it would be physically difficult to achieve in terms of the articulation of speech sounds and/or it would not be comfortable for the audience to comprehend.[62] The numeric values of the syllables/second rates calculated here are instrumental to comparing and ranking the minimum possible tempos of Attic speeches relative to one another but, as they stand, they are not informative as to the absolute tempo at which the speech would have been uttered and, importantly, perceived to be uttered. Evidently, a rough estimate of the 'normality' of the calculated speech rates may be obtained through comparison with values measured for modern languages. This exercise has already been attempted by Rome (1952: 601), who calculated the tempo of Attic speeches in words/minute and brings in broadly-defined varieties of contemporary French for comparison (e.g. '[vitesse] sténo commerciale' and 'nous parlons lentement, en Belgique: dans le midi, cela va autrement vite'). Rome's approach presents at least two major problems. To begin with, words/minute is not a suitable unit of measurement for cross-linguistic comparison, if only because different languages have different word structures and may have widely different syllable/word ratios (cf. Roach 1998: 151, Verhoeven et al. 2004: 298)—this is especially evident if one defines 'word' in merely orthographic terms as a string of characters surrounded by spaces. Phoneticians normally express speech rates in syllables/second (see n. 57), but while such measurements are perfectly fine for comparing speech rates internally to one language (as is the case with the present study of Attic speeches), similar caveats apply when comparisons are attempted across languages. Different languages have different syllable structures and may or may not admit diphthongs and consonant clusters, or they may admit consonant clusters up to a certain size (cf. Roach 1998: 152, Fletcher 2010: 572). Theoretically, the higher the number of speech sounds (segments) in a syllable, the longer it will take for a speaker to pronounce that syllable (cf. Devine and Stephens 1994: 225). In connected speech word-final and word-initial

[62] The issue of the duration of a speech had already been raised by Dionysius of Halicarnassus (*Lys.* 5), who seems to imply that 'professional' orators were generally careless in this respect.

consonants may be resyllabified (e.g. /to skɛ:p/ > /tos.kɛ:p/ and /tron.a/ > /tro.na/ in *τὸ σκῆπτρον ἀνέσχεθε*, *Il.* 7.412); at particularly high speech rates consonant clusters may be simplified and vowels may be reduced or elided. If we measured speech rate in segments/second, we might obtain a 'normal' value for tempos that, instead, are perceived as high precisely because a number of speech sounds are left out (cf. Voigt and Schüppert 2013). In Roach's words (1998: 152), 'in theory, then, it could happen that in speaking quickly I might produce no more sounds per second than when speaking slowly'. As Roach suggests, a meaningful measure would rather be obtained by the phonemes that would have been uttered in careful speech. Phonemes/second is virtually the most accurate unit of measurement of speech rate for cross-linguistic comparison (even though the difficulty remains that not all phonemes have an equal duration) and is not difficult to calculate for the written texts of Attic speeches. However, the only measure that we would obtain if we divided the total number of phonemes in a speech by the reconstructed duration of the allotted time in seconds is that of the slowest possible speaking rate for those texts, which includes the articulation of speech sounds as well as the duration of all pauses. What is commonly measured by experimental phoneticians, however, is articulation rate, that is, the pace at which speech sounds are produced excluding all audible moments of silence from the calculation of the duration of utterance (see Fletcher 2010: 570; this, of course, is impossible to calculate for a classical Greek text without speculating on the duration of such pauses). Moreover, most studies on modern language give measures of articulation rate expressed as syllables/second, which leaves us with a dearth of immediately usable data for cross-linguistic comparison.

These problems are not insurmountable. Pellegrino and colleagues (2011: 549) conveniently calculated the average phonemes/syllable ratio for a number of modern languages based on large electronic corpora.[63] They report values of 2.48 phonemes/syllable for English, 2.21 for French, 2.68 for German, 2.30 for Italian, 1.93 for Japanese,

[63] Pellegrino and colleagues (2011) provide counts per both syllable-type and syllable-token. Phonemes/syllable-type measures are obtained by compiling an inventory of possible syllables in a language and dividing the total number of phonemes in the syllable inventory by the number of syllable-types; in this type of measurement, rare syllables have the same weight as frequent syllables in the calculation. Phonemes/syllable-token measures, on the other hand, are obtained by dividing the total number of phonemes in the corpus by the number of syllables in the corpus, and

3.58 for Mandarin, and 2.40 for Spanish. Going back to Attic speeches, we count 21,895 phonemes over 9,635 syllables in Apollodorus' *Against Timotheus* (2.27 phonemes/syllable), 23,229 phonemes over 10,109 syllables in Demosthenes' *Against Aphobus* (2.30 phonemes/syllable), and 17,641 phonemes over 7,501 syllables in Isocrates' *Trapeziticus* (2.35 phonemes/syllable).[64] A rough estimate based on this handful of speeches would place fourth-century Attic more or less in the same league as Italian. Pellegrino and colleagues (2011: 544) report an articulation rate of 6.99 syllables/second as a 'normal' tempo for Italian oral reading. Using the 'conversion rate' of 2.30 phonemes/syllable, this corresponds to about 16.1 phonemes/second.[65] The similarity of the phonemes/syllable ratio of Italian to that of our Attic speeches would allow us to directly compare the phonemes/second speech rates with the average ones for that language. However, pauses must be taken into account—we would need to estimate either the average speaking rate of Italian or the articulation rate of the Attic speeches. There are indications that the duration and frequency of pauses may vary both across (Nishinuma and Hayashi 2005) and within languages (Verhoeven et al. 2004: 303);[66] the reported ranges

depend on the actual frequency of syllable-types in the language. The measures used here are per syllable-token.

[64] It goes without saying that it what is counted here is phoneme-tokens. Double consonants (<ζ>, <ξ>, <ψ>) are counted as two phonemes (/zd/, /ks/, /ps/) and the diphthongs <ει> and <ου> as one (/e:/, /o:/, cf. Allen 1987: 78). Rough breathings are included in the count.

[65] Another measure for the average articulation rate of Italian is 6.4 syllables/second (Roach 1998: 153), which gives 14.72 phonemes/second. Here, the data presented by Pellegrino and colleagues will be used for the purpose of cross-linguistic comparison; their reported value for Italian is part of a cross-linguistic study of spontaneous reading rates of multilingual versions of the same texts, which allows controlling for semantics as a possible source of variation (see Pellegrino et al. 2011: 542).

[66] The Dutch data reported by Verhoeven and colleagues (2004: 303) seems to indicate that pauses get shorter as the articulation rate decreases—the divergence between articulation and speaking rates is higher for higher articulation rate values: within equal lengths of time, pauses amount to 19.74 per cent of the total duration in Randstad Dutch and only to 4.1% in Brabant Flemish (these values have been calculated as follows: 100 − (*speaking rate* × 100/*articulation rate*)). Linear regression shows that the correlation between articulation rate and pause time is strong (r^2 = 0.965). The same does not apply to the cross-linguistic data provided by Pellegrino and colleagues (2004: 518). Devine and Stephens (1994: 433) observe that 'as speech rate is increased, pausing is curtailed', but the study on which such conclusion is based measures pauses in intentionally (not spontaneously) slow or fast speech.

Table 3.1. Speech rates of Attic forensic speeches, compared with modern Italian

	[D.] 49	D. 27	Isoc. 17	Italian
Syllables	9,635	10,109	7,501	
Phonemes	21,895	23,229	17,641	
Seconds	1,260	1,800	1,800	
Phonemes/syllable	2.27	2.30	2.35	2.30
Speaking rate (30% pause time)				
Syllables/second	7.65	5.62	4.17	4.89
Phonemes/second	17.38	12.90	9.80	11.25
Articulation rate (30% pause time)				
Syllables/second	10.92	8.02	5.95	6.99
Phonemes/second	24.82	18.43	14.00	16.08

of variation in pause time in different languages go from 15–30 per cent for Swedish to 6–38 per cent for French (Fletcher 2010: 573). If we took 30 per cent as a rather conservative estimated pause time, we would obtain the values displayed in Table 3.1.

Another element to take into account is the fact that languages may have different normal speech tempos. Spanish syllables, for instance, are on average more complex than Italian syllables (2.4 vs 2.3 phonemes/syllable) but the observed articulation rate for this language is higher than for Italian (7.82 vs 6.99 syllables/second), which gives an average phonemes/second rate for Spanish of about 18.77. Based on the data reported by Pellegrino and colleagues (2011), we may calculate phonemes/second rates of 15.35 for English (2.48 phonemes/syllable × 6.19 syllables/second), 15.87 for French (2.21 × 7.18), and 16 for German (2.68 × 5.97)—all of which fall in line with Italian. If we believe that fourth-century Attic belonged in this league, we may observe that the lowest possible speech rate for Isocrates' *Trapeziticus* would be slightly slower than 'normal' and that of Demosthenes' *Against Aphobus* would be slightly higher. Based on a less conservative (and conceivably more realistic) estimate of 20 per cent pause time for fourth-century Attic, the minimum speech rate for Demosthenes' speech would amount to 16.13 phonemes/second, which aligns perfectly with one of the reported values for 'normally'-paced Italian. The minimum tempo for Apollodorus' speech, instead, appears too high both with a 30 per cent and a 20 per cent estimated pause time (24.82 and 21.72 phonemes/second respectively). An experiment conducted by Dellwo and Wagner (2003) has measured the fastest speed at which native speakers of English, French, and

German could read aloud a text in their respective languages, and found average highest articulation rates of 11.1 syllables/second for French, 8.18 for German, and 7.95 for English. Conversion into phonemes/second gives about 24.53, 21.92, and 19.71 respectively, which would mean that a speech like the *Against Timotheus* would literally have been rushed through. If, however, we are ready to believe that fourth-century Attic could have been as 'fast' as Spanish (about 18.77 phonemes/second), the minimum tempo calculated for Apollodorus' speech looks less aberrant, at least if we estimate a 20 per cent pause time. With as little as about 7.41 per cent pause time,[67] the pace of delivery would correspond more or less to that of normal Spanish speech. On these grounds, the case for invoking the length of the extant speeches as an argument for their lack of correspondence with the delivered text may not plausibly be made for most of them; this, of course, does not entail that the texts were delivered exactly as we read them—they could have been extended, cut short, or otherwise altered in oral delivery (cf. Canfora 1974: 40, Cole 1991: 117, and MacDowell 2009: 3).

Another element which has often raised the suspicion that the text of certain speeches was revised and published after the trial is the orator's anticipation of his opponent's arguments and counter-arguments. When more than one speech from the same trial survives (e.g. Aeschines' and Demosthenes' speeches for the embassy and the crown affairs), one may observe that not all of the arguments anticipated in one speech figure in the opposing one. If anything, the absence of the anticipated arguments from speeches where they would have been expected indicates that 'final' versions of such texts do not depend on one another (Canfora 1974: 43). Anticipation itself may in many cases be interpreted as mere guesswork (MacDowell 2000: 25), perhaps based on the study of similar cases (Carey and Reid 1985: 16), or as the result of *anakrisis* (a preliminary hearing of sorts), or as based on leaked information (cf. D. 19.332; see Dover 1968: 168–70, Canfora 1974: 41–2, and Rubinstein 2000: 64 with further references). Defendants and prosecutors might have been informed of, or guessed, some of the arguments that their opponent could (but in the end did not) use (cf. Dover 1968: 169) and have prepared a response; as Canfora (1974: 43) remarks, such

[67] Cf. n. 66 on pause times in Flemish.

arguments might also have been circulating in the public arena. Hubbard (2008: 191) is not inclined to believe that 'secret' details of the opponents' strategy could have been leaked before the trial—whereas Canfora (1974: 41) envisages full-fledged espionage in fourth-century Athens—and identifies a number of anticipated arguments in the speeches of Aeschines and Demosthenes that would not plausibly have been guessed or learnt in preliminary *anakrisis*. Canfora himself (1974: 42) remarks that, for instance, the first part of the prologue of Aeschines' embassy speech (2.1–6) is based on Demosthenes' actual delivery of the prosecution speech, including the reaction of the jurors, whereas the prepared text appears to begin from section 7. This indicates that speeches could be altered after delivery, conceivably either for publication—or, more generically, 'release' (cf. 3.4)—or for archival/study purposes (cf. 3.1). The extent and quality of revision would vary greatly according to the intended use of the text, the mode of release, and the purpose of publication, if the text was to be published. Forensic speeches did not have to be reshaped into polished texts with an 'Isocratean finish'—and indeed they were not, as Canfora (1974: 45–6) underlines—especially if informal circulation among the author's inner circle was envisaged. On this point, the lack of editorial polish and the apparent unfinished state of the text have often been observed for Demosthenes' *Against Meidias*, a speech that has been conjectured to have never been delivered (see Dover 1968: 172–4, Canfora 1974: 44–5, MacDowell 1990: 23–8, 2000: 23, and 2009: 246). This conjecture is based on Aeschines' assertion (3.52) that Demosthenes 'sold' (ἀπέδοτο) the case for thirty *minae*; as MacDowell (1990: 23–4) points out, this statement need not be read as an indication that Demosthenes accepted monetary compensation and dropped the case, but it may plausibly be interpreted as referring to the request of a commutation of death penalty into a fine. Worthington (1991a: 67), in turn, regards this assertion as entirely fabricated and as an addition made by Aeschines to the published version of the *Against Ctesiphon*. Textual features of the *Against Meidias* that manifest the 'rawness' of the text (omissions, inconsistencies, incoherent passages, and alternative treatments of the same argument) would not indicate that the speech was never delivered, but rather that Demosthenes only drafted this speech in writing, regardless of whether the trial was called off or not. The dissemination of this text could have started either in Demosthenes' lifetime, if he allowed his admirers to make copies of the draft

(so MacDowell 1990: 28), or after his death, with the draft being found and published by his heirs (on which see also 3.1; cf. Canfora 1974: 44)—a scenario already envisaged in antiquity (as reported by Photius, *Bibl.* 265 491b4–6).[68]

As observed above (3.4), if a text was first composed as a script and subsequently released for use a scripture, its 'conception' would still remain that of a script (cf. Canfora 1974: 44), unless we envisage substantial rewriting. This was probably not the case with the texts of forensic speeches. In general, interventions in the text for publication would not have been too invasive, and the overall rhetorical quality of the text would not plausibly be altered (cf. Nicolai 2004: 19, Gagarin 1999: 164, n. 8 and in Carey 2000: xix, Lavency 1964: 190, Dorjahn 1947: 72–3 and 1950: 10, *pace* Hall 1995: 41 and Worthington 1991a; cf. Yunis 2001: 26–7 on Demosthenes' *On the Crown*).

If we turn to deliberative (symbouleutic) speeches, the picture is no less complex. Assembly meetings were significantly more unpredictable than courtroom sessions, and improvisation was an even more essential skill. Speakers did not know when their turn would be, nor could they easily guess what other speakers would talk about. As a consequence, politicians would need to extemporize most of the time, which made written preparation simply impractical (cf. MacDowell 2009: 5–6, Edwards 1995: 105, and Trevett 1996b: 434). Moreover, this practice would also be discouraged by the stigma of sophistry and dishonesty attached to 'writtenness', which conceivably carried an even more considerable weight in a political context than in a juridical one.[69]

The earliest extant Assembly speeches are those of Andocides, *On his Return* (delivered sometime between 411 and 405) and *On the Peace with Sparta* (around 391). Both speeches were unsuccessful and could in principle have been circulated for the purposes of 'setting the record straight' and 'getting the last word'[70] (cf. Kennedy 1963: 204–5), as well as circulating minority and anti-democratic views

[68] Photius' source claims the same thing about Demosthenes' *On the False Embassy*.

[69] Demosthenes, according to Plutarch (*Dem.* 8.6), turned this argument around and claimed that preparing a speech in advance was a sign of respect for the people and the democratic institutions (cf. also [Plu.] *Lives of the Ten Orators* 848c). Canfora (in De Robertis 2015: ii) reads this as an ironic allusion to the ostensible literary expertise of contemporary Athenian audiences.

[70] Hubbard's expressions, see above.

(cf. Edwards 1995: 109–13). In this respect, these texts align with the Isocratean practice of writing and circulating entirely fictional deliberative speeches (*pace* Trevett 1996b: 433). This practice was the prerogative of intellectuals and public figures who deliberately refrained from active participation in politics, but was probably initiated by those of them who could not be involved in the Athenian political institutions by virtue of being foreigners (e.g. Thrasymachus of Chalcedon, cf. Edwards 1995: 105, Hansen 1984: 67). Andocides, a supporter of oligarchy and an exile (at the time of the composition of *On his Return*), would naturally fall, by extension, into both categories (cf. Canfora 1974: 13). Actual politicians (*rhetores*) active in fourth-century Athens do not seem to have significantly followed suit in publishing their deliberative speeches, and it may be questioned whether they commonly prepared this type of orations in writing at all or not. The fact that only a small fraction (about one-eighth)[71] of the extant Attic speeches are deliberative is often adduced in this connection. As a number of scholars have observed (cf. Hansen 1984: 60–8), it is likely that we still possess most of the deliberative speeches that circulated in writing in antiquity—Hansen (1984: 68) counts at most only six losses, as opposed to over 200 lost forensic speeches[72]—and their relative scarcity indicates that the release (if not the written composition) of this type of oratorical texts was exceptional.

On this point, it is significant that the Demosthenic corpus includes a collection of fifty-five (or fifty-six) prologues (*prooimia*) to deliberative speeches. It is unlikely that the prologues were published by Demosthenes (cf. for instance Pasquali 1952: 292, Hansen 1984: 63, and Canfora 1974: 74 and 2014b: 46, with the parallel case of Cicero, *Att.* 16.6.4).[73] Five of them closely resemble the initial sections

[71] At most nineteen out of 150 preserved speeches (Hansen 1984: 60): two of Lysias (*Against Ergocles*, *On the Constitution*), two of Andocides (*On his Return*, *On the Peace with Sparta*), thirteen of Demosthenes (three *Olynthiacs,* four *Philippics, On the Peace, On the Chersonese, On the Public Fund, On the Symmories, For the Liberation of the Rhodians,* and *For the Megalopolitans*) and two (probably) of Hegesippus (*On the Halonnesus*, [D.] 7, and *On the Accession of Alexander*, [D.] 17). Both Usher (1999: 99) and Todd (2000: 286) regard Lysias' *Against Ergocles* as a forensic speech.

[72] As Hansen (1984: 68) remarks, contemporary quotations (such as those in Aristotle) need not presuppose a written source. Lost (apocryphal) works of the Demosthenic corpus—listed at MacDowell 2009: 8—include only forensic speeches.

[73] Yunis (1996: 289) raises the possibility that Demosthenes released his collection of prologues among his inner circle and connects them with his teaching activity.

of speeches transmitted in full (*Prooem.* 1.1 = D. 4.1, *Prooem.* 3 = D 1.1, *Prooem.* 7 = D. 14.1–2, *Prooem.* 8 = D. 16.1–3, *Prooem.* 27 = D. 15.1–2; cf. Hansen 1984: 63 n. 27, Worthington 2006: 57, and MacDowell 2009: 6),[74] but most of them exist independently of the speeches which they would have introduced. These, in turn, were most probably not committed to writing altogether (cf. Hansen 1984: 63); if the prologues were not published by Demosthenes but by his heirs (cf. Yunis 1996: 289), it is not obvious why they would have detached them from the remainder of each speech, if it existed, and all the more so if they did not publish the complete speech at all. In fact, the very existence of the prologues as independent texts has been interpreted as an indication that Demosthenes would habitually extemporize before the Assembly and prepare in writing only enough material to break the ice with his audience as painlessly as possible, in case of necessity (cf. Dorjahn 1947: 75, Canfora 1974: 28–9, Yunis 1996: 255, Trevett 1996b: 438, and MacDowell 2009: 6).

This raises the question why Demosthenes wrote the thirteen full speeches that have survived to our day. Worthington (2006: 57–8) observes that Demosthenes 'may have written out his speeches before an Assembly at which he knew he would speak on a specific matter', which implies that Demosthenes would normally compose his deliberative speeches in full, if he could (cf. MacDowell 2009: 5–6 and Trevett 1996b: 437), and improvise only when he could not avoid it (cf. also Plu. *Dem.* 9.3, on which see Canfora 1974: 25). This squares well with the anecdotal information brought up by Worthington: Plutarch reports that Demosthenes was uncomfortable about speaking extempore, unlike his more talented rivals (*Dem.* 8, 10.1), and that he admitted that his speeches were neither fully written nor fully improvised (*Dem.* 8.5–6, cf. Canfora 1974: 28). It has also been noted that most of Demosthenes' deliberative speeches date to the beginning of his career, when he would have found it more difficult to extemporize (cf. n. 43). In particular, eight speeches date between 354/3 and 350/49 BC, when Demosthenes was about thirty-five, and five date between 346 and 341 (cf. MacDowell 2009: 12). Looking at the wider picture, youth and/or lack of experience could be recognized as a common feature of the early authors of written deliberative

[74] Canfora (1974: 28) observes that not all prologues are *exordia* and notes that *Prooem.* 33 echoes the conclusion of the *First Philippic*; this is especially true of *Prooem.* 33.3 and D. 4.51, even though the passages do not correspond verbatim.

speeches as well. Andocides was not a regular political orator (cf. Edwards 1995: 4) and delivered *On his Return* when he was still relatively young, probably in his early thirties (sometime between 411 and 405).[75] Our only example of political logography, Lysias' *On the Constitution*, would also point to the fact that certain political speakers would need the services of an experienced speechwriter. However, Dionysius of Halicarnassus—the only source for the text of this speech (quoted at *Lys.* 32–3)—mentions a 'prominent politician' (*τῶν ἐπισήμων [τις] καὶ πολιτευομένων*) as the speaker and seems to imply that this man was meant to act as a spokesperson for the metic Lysias, who could not participate actively in the Assembly but is seemingly credited with some political agency (*ἵνα δὴ μὴ τοῦτο γένοιτο, γράφει τὸν λόγον τόνδε ὁ Λυσίας*). Going back to Demosthenes, the fact that we possess only five speeches from his mature period—when we know that he must have delivered more (see e.g. Philoch. [*FGrHist* 328] F55a–b and 56; cf. Canfora 1974: 30)—perhaps indicates that he prepared in writing only a few significant ones. The practice of composing speeches in writing would be unusual for a career politician[76] and, if we trust Plutarch (*Dem.* 8.4–5 and 11.6), this exposed Demosthenes to mockery (cf. Trevett 1996b: 437). It is significant that we have no deliberative speeches by Demosthenes dating from after the battle of Chaeronea, which marked the beginning of his political downfall (cf. Canfora 1974: 30 and MacDowell 2009: 382) but did not bring about the abrupt end of his career (cf. for instance Plu. *Dem.* 23.2; see Worthington 2000 and 2013: 285, and MacDowell 2009: 378–9). Once again, the absence of deliberative speeches dating from this period may indicate that Demosthenes did not write any down. On the other hand, one may also hypothesize that such written texts (including those of the forensic speeches for the Harpalus affair, cf. MacDowell 2009: 413) existed but were simply not released—whether by Demosthenes or by his heirs—for reasons of political expediency (so Canfora 1974: 76, 2014b: 50, and in De Robertis 2015: iii–iv). In principle, the idea that

[75] Judgements on the rhetorical sophistication of this speech are not unanimous; see for instance Kennedy 1958: 33–6 and Edwards 1995: 91.

[76] Th. 8.66 (*οἱ λέγοντες ἐκ τούτων ἦσαν καὶ τὰ ῥηθησόμενα πρότερον αὐτοῖς προύσκεπτο*) may not be used to prove the opposite (*pace* Canfora 2014b: 46)—preparation does not imply written composition; cf. Trevett 1996b: 434 and Worthington 2013: 34.

Demosthenes or his posthumous editors made a selection of his works could apply to the rest of his production as well.[77] However, there are caveats to this hypothesis, namely, the observations that success was not a condition for the preservation and release of forensic speeches (cf. Lavency 1964: 191 and Worthington 1993: 68) and that deliberative speeches are precisely those that we would expect to be revised and circulated by an orator or his political associates for the purpose of 'setting the record straight'. As is evident from this brief summary, much of the debate as to whether the surviving deliberative speeches of Demosthenes are all the texts in this genre that he ever wrote is based on arguments from silence, making it difficult to reach any firm conclusion. On these grounds, it is only safe to say that we possess at most the full texts of deliberative speeches that either Demosthenes or his editors deemed worth preserving and releasing in the first place (this select corpus may or may not coincide with the entirety of his written deliberative production, and it may in principle have been further slimmed down in the tradition).

As we have seen, there are reasons to believe that the orator's heirs played a role in the process (cf. Sealey 1993: 229). This is suggested by the inclusion of the prologues (cf. Canfora 1974: 74) and by the state of the text of the *Third* and *Fourth Philippics*, which may be taken as an indication that at least certain works were not released with Demosthenes' approval—let alone on his own initiative (cf. Nicolai 2004: 66, n. 71). We have mentioned that the extant text of these speeches does not seem to derive from a polished version suitable for publication. The *Fourth Philippic*, in particular, has been widely deemed to be poorly composed from both a stylistic and a structural point of view and is possibly spurious (cf. Worthington 1991b: 425, Milns 2000: 205, and Hajdú 2002: 44–5 for a review). Blass (1893: 384–92) regards this text as a medley of original notes and drafted speech parts, including, for instance, as many as three prologues (1893: 385)—a position shared by Weil (1881: 358–66) and Canfora (1974: 27–8).[78] Alternative scenarios are conceivable (see for instance

[77] The same objection may be raised against Trevett's point (1996b: 436) that if other political orators 'had commonly written their speeches down, some at least would have survived into the Hellenistic period'.

[78] Brill (1873: 207) advanced the hypothesis that a section of the *Third Philippic* (47–54) is a piece of another oration, which would further complicate the history of this text (this section is found throughout the tradition). Canfora (1971: 35) is inclined

Trevett 1996b: 429–30); at any rate, there is a consensus that the *Fourth Philippic* was a draft that was only eventually published by Demosthenes' heirs (cf. Hajdú 2002: 49). This is also conceded by Worthington (1991b), who generally believes that Demosthenes was responsible for the written dissemination of most of his own speeches. The fact that the corpus includes speeches of the likes of Apollodorus and Hegesippus—members of Demosthenes' faction (cf. Trevett 1992: 146–7 and MacDowell 2009: 332)—speaks in favour of an early compilation and release of the corpus within the Athenian 'Demosthenic' milieu (so Canfora 1974: 75). This does not exclude the supposition that copies of some deliberative speeches of Demosthenes might already have circulated in his lifetime with some degree of authorial control (cf. Nicolai 2004: 64–6).

The hypothesis that Demosthenes substantially revised most of his deliberative speeches (or composed some without delivering them at all) and published them as 'Isocratean' pamphlets—an idea that has been current in modern scholarship since the 1820s—is mostly based on judgements of rhetorical effectiveness and on the alleged advantage deriving from the written dissemination of political opinions (see Canfora 2014b: 27–41 and Trevett 1996b for detailed review and criticism).[79] However, for one thing such texts are clearly not 'Isocratean' (see Yunis 1996: 245 and Canfora 1974: 37–8); for another, it does not seem plausible that a career politician would adopt a political strategy that had been confined to outsiders and that, in fact, would not turn into a trend among his contemporary or younger colleagues (*pace* Sealey 1993: 229, Yunis 1996: 242–7, and Hansen 1984: 70, n. 30, followed by Wooten 2008: 74–5; cf. Trevett 1996b: 434–5 and Hajdú 2002: 47).[80] In fact, pamphlets were produced by

to believe in the displacement of this part of the speech from its original location (which he identifies as following section 40).

[79] Another common argument draws on the fact in the *First*, *Second*, and *Third Philippic* a proposal is announced but is missing from the text—as Canfora (1974: 33 and 2014b: 38 and 47) rightly remarks, this would rather attest to the fact that such speeches were written in preparation for the actual debate and not polished for publication; the same objection applies to the omissions mentioned by Milns (2000: 207–8) to this end, cf. also Trevett 1996b: 427–8 and 438.

[80] Apart from one or two speeches by Lysias and those by Andocides, all the extant deliberative speeches are part of the Demosthenic corpus (see n. 71). The lost speeches identified by Hansen (1984: 67–8) include one by Andocides, two by Hyperides, one by either Demosthenes or Dinarchus, and perhaps one by Philinus and one erroneously attributed to Demosthenes.

Demosthenes as an exile in the shape of letters to the Athenian Boule and Demos (cf. Canfora 1974: 30; see MacDowell 2009: 408–9 on their authenticity). The anecdotal reports that are sometimes mentioned as evidence for the publication of the deliberative speeches on the part of Demosthenes do not provide conclusive indications that this was the case. According to a second-hand report transmitted by Plutarch (*Dem.* 11.4), Aesion, an orator and a contemporary of Demosthenes, compared the rhetorical effect of the speeches delivered by the old *rhetores* to the people (*τῷ δήμῳ*) with that of the speeches of Demosthenes when read (*ἀναγιγνωσκόμενοι*). Canfora (1974: 25–6), once again, rightly remarks that this may not be taken as evidence of the circulation of pamphlets based on deliberative speeches.[81] At most, this anecdote suggests that written copies did exist and could circulate in certain circles (perhaps among other orators, whether friendly or hostile; see Nicolai 2004: 65 and Canfora 1974: 70; cf. Plu. *Dem.* 8.2). The same may be argued about a passage from the *Lives of the Ten Orators* (845d) which relates that Demosthenes' speeches were brought to Philip—this does not imply that it was Demosthenes who sent them as, apparently, would Isocrates, nor that the speeches were revised and released onto the book market (cf. Canfora 1974: 70, *pace* Wooten 2008: 167, n. 3). This idea is supported by the observation that Aristotle does not quote from forensic and deliberative speeches in the *Rhetoric*, while he cites extensively from epideictic literature (see Trevett 1996a, cf. Canfora 2014b: 22); the fact that he explicitly connects epideictic oratory with written style (*Rh.* 1414a18–19, on which see 1.3) gives credibility to this argument from silence (cf. Trevett 1996a: 377). In conclusion, it seems plausible that Demosthenes' deliberative speeches were composed in preparation for actual Assembly debates and that they could (but need not) have been annotated or retouched after the event for the author's (and his associates'?) own use. Written copies, whether authorized or illegal, could circulate among interested parties, but the texts would not have been 'scripturified' for the purpose of written dissemination as 'Isocratean' pamphlets. Their conception would still preserve their initial status of scripts drafted to achieve public oral performance.

[81] As indicated by the mention of *rhetores* (cf. Hajdú 2002: 48), if not by the reference to 'the people', and by the supposition that Aesion would only compare speeches of the same oratorical genre.

4

Comprehension

4.1 THE DOMAINS OF CLARITY

According to Aristotle, clarity (*sapheneia*) is the primary component of the *lexeos arete*, the 'virtue (or excellence) of diction' (*Po*. 1458a18, cf. Innes 1985: 255). In a parallel passage of the *Rhetoric* (1404b1–4) he adds that the function (*ergon*) of speech (*logos*) is to 'make clear' (*deloun*): failure of clarity equals failure of linguistic communication. Modern linguists would fundamentally agree on this principle; Grice (e.g. 1989: 26–7), for instance, identifies speaking clearly as one of the elements which contribute to the success of linguistic exchanges. If linguistic interaction is conceived as a cooperative effort, participants in such exchanges are expected to express themselves in a manner instrumental to the shared purpose of this effort. As far as the linguistic form of the message is concerned, expression should be as perspicuous as possible: obscurity, ambiguity, prolixity, and disorder must all be avoided. This is especially crucial in real-time interaction, in which the message must be received and processed in on-line conditions—in which the linguistic material may not be re-accessed after the initial perception of the visual or auditory stimulus (cf. McGillivray and Vatri 2015: 113). In this connection, Leech recognizes a 'processability principle' as an essential component of what he calls 'textual rhetoric'—the set of strategies aimed at the effective use of linguistic utterances in everyday oral communication (cf. Leech 1983: 15); in Leech's words (1983: 64), 'the principle recommends that the text should be presented in a manner which makes it easy for the hearer to decode in time'.[1] In addition to

[1] A terminological caveat: Leech uses the term 'text' to refer to what would be called 'message form' in other frameworks (cf. 2.1), whereas 'message' roughly

conversation, this principle crucially applies to scripts—written texts meant to be performed in communicative situations that allow only on-line processing—and one may argue without difficulty that clarity is 'the highest priority' for public speeches, especially those 'intended to convince the hearers of certain facts, or to persuade them to adopt a certain course of action', which would '[fail their] purpose if [the hearers] do not understand what is being said', as MacDowell (2009: 398) observes with reference to Attic forensic oratory. In the ancient Greek rhetorical literature, one may find a similar idea in 'Demetrius', who remarks that 'persuasiveness depends on two things, clarity (*to saphes*) and familiarity' (*Eloc.* 221, transl. D. C. Innes).

According to 'Demetrius', both persuasiveness and clarity are prerogatives of the 'plain (*ischnos*) style' (*Eloc.* 208), one of the four simple 'types of expression' (*charakteres tes hermeneias*) identified in his treatise (which probably dates to the second century BC; see de Jonge 2008: 40), and a primary one together with the 'grand (*megaloprepes*) style', to which it stands in opposition (Demetr. *Eloc.* 36; see also O'Sullivan 1992: 12). The connection between the plain style and clarity is reciprocal: diction (*lexis*) in the plain style must be clear (*Eloc.* 191), and clarity is most at home in the plain style (*Eloc.* 203)—an idea that may be traced back to the critical discourse current in the age of Aristophanes: as O'Sullivan (1992: 8–10) underlines, the non-ordinary language of Aeschylus is accused of being obscure (*asaphes*) in the *Frogs* (e.g. at 1122). Another feature of the plain style is *enargeia* (vividness), which is generated in the first place by precision of speech (*akribologia*, *Eloc.* 209).[2] As we have seen (1.3) precision (*akribeia*), in general, is a feature that both Aristotle (*Rh.* 1413b8–9) and Isocrates (5.27–9) discern in the style of texts

corresponds to what others may call 'message content'. Quite importantly, he does not regard these as equipollent components of a speech act, but regards the linguistic expression ('text') as part of the communicated meaning ('message'); see Leech 1983: 59. On this point, it is worth remarking that no claim of equipollence in the production of a linguistic expression is made as regards the components of speech acts listed in Chapter 2—a framework adopted only for the situational description of linguistic material. The complex interactions of the linguistic and extra-linguistic context, communicative intentions, and the lexical and morphosyntactic possibilities of a language in determining the linguistic form of a speech act are better captured by fully fledged grammatical theories (see e.g. Hengeveld and Mackenzie 2008: 6–18) and will not concern us here.

[2] Salomone (1998: 85) sees a distinction between *akribologia* and *akribeia* but offers no in-depth explanation.

meant for *anagnosis* (cf. 1.3, 2.3, 3.1). 'Demetrius' calls this quality *mikroprepes* ('petty, trivial'); as such, it is not appropriate to either the grand (*Eloc.* 53) or the 'forceful' (*deinos*) style (*Eloc.* 274). *Akribeia* is seemingly firmly rooted in the plain style and closely connected to *sapheneia* (see O'Sullivan 1992: 44–6).[3] As a textual/linguistic device, *akribeia* contributes to *enargeia*—a vivid mental 'experience' of the events, objects, persons, etc. evoked by the text (cf. Allan 2015). Analogously, *akribeia* may also generate *sapheneia*—the state of having a clear 'vision' (a clear knowledge or understanding) of the entities evoked by the text (cf. *Rh.Al.* 14.5 1431a41–2; see Lesher 2010: 148–55). This observation implies that *sapheneia* should not be regarded as simply having to do with the transmission of the linguistic message. While *akribeia*, as a rhetorical quality, affects the form and content of the message as part of the communication process, *sapheneia* denotes the result of this process as well. In other words, language is clear when it generates a clear intellectual 'vision' (cf. *Rh.Al.* 30.5 1438a22–3). From this perspective, it is not difficult to see why *enargeia* and *sapheneia* are often associated with one another in the Greek rhetorical tradition (e.g. in Theo *Prog.* 71.31–72.1 Patillon).[4] In this connection, it is quite telling that in a rhetorically self-conscious genre like Attic oratory the adverb *σαφῶς* occurs virtually as frequently with verbs denoting the mental state of having clear knowledge (*οἶδα*, *ἐπίσταμαι*, *γιγνώσκω*, *πυνθάνομαι*, metaphorical *ὁράω*, *δῆλόν ἐστι*, *μιμνήσκομαι*, *μανθάνω*; sixty-seven occurrences) as with verbs unequivocally referring to the transmission of the linguistic message itself (e.g. *λέγω* and compounds, *φράζω*, *διηγέομαι*, *ἀπαγγέλλω*, *ἐρωτάω*, *μαρτυρέω*, *ἀπολογέομαι*,

[3] *Enargeia*, *akribeia*, *sapheneia*, plainness, purity, and persuasiveness are often mentioned in a number of combinations with one another in several passages of the rhetorical works of Dionysius of Halicarnassus (e.g. *Is.* 3, *Dem.* 6, 11, and 13). Dionysius' use of the term *akribeia* needs a word of warning. Dionysius lists *akribeia* among the qualities of the style of Isaeus (*Is.* 3); the list closely mirrors that of the qualities of Lysias (*Lys.* 13), where *ἀκρίβεια* is accompanied by the genitive *τῆς διαλέκτου*. What Dionysius means by 'precision of dialect' is apparent from *Isoc.* 11, where he mentions that the styles of both Lysias and Isocrates are characterized by *ἀκρίβεια τῆς διαλέκτου τῆς τότε συνήθους*, 'accuracy of the customary language of their day'—a rather different notion of *akribeia* from that discernible in 'Demetrius'. A connection between *akribeia* and *sapheneia* is implicitly made by Theon's *Progymnasmata* (130.24–131.18 Patillon, part of which is transmitted only in Armenian), which describe how lack of detail may generate obscurity in laws, leading to their being interpreted too broadly or too restrictively.

[4] See Becker 1995: 25, n. 45 for a useful list of passages.

προσγράφω, κελεύω; sixty-three occurrences). It is also remarkable that more than half of the tokens counted in the latter category are forms of verbs of 'showing': ἐπιδείκνυμι (twenty-three times), ἀποδείκνυμι (six times), δείκνυμι (three times), δηλόω (four times). The visual metaphor underlying the meaning of these verbs points, once again, to the effect on the mind of the receiver of the speech act that they describe.

Akribeia is one of the means by which *sapheneia* may be achieved, but it is not always a good choice. 'Demetrius' (*Eloc.* 222), for instance, discusses how *akribeia* may be detrimental to persuasiveness (whose mainstay is *sapheneia* itself, as we have seen). He reports Theophrastus' suggestion (fr. 696 Fortenbaugh) that excess of detail may be interpreted by listeners as a sign of underestimation of their own intelligence on the part of the speaker, and that one 'should omit some points for the listener to infer and work out for himself' (transl. D. C. Innes). This passage is reminiscent of Aristotle's remarks that definitions need not be accurate but must not be obscure (*Rh.* 1369b31–2) and that neither trivial, self-evident enthymemes,[5] which stimulate no further analysis, nor those that are impossible to figure out are viewed with favour. Good enthymemes must automatically trigger the mental processes that generate knowledge, and it does not matter if the meaning (*dianoia*) is grasped with a small delay (Arist. *Rh.* 1410b21–6). In other words, the triviality of excessive *akribeia* may, in principle, contribute to *sapheneia* as far as the form of the message is concerned, but it may interfere with the generation of *sapheneia* in the mind of the listener (cf. Sluiter 2016: 40). As 'Demetrius' himself remarks (*Eloc.* 99–100 and 254), there are cases in which, paradoxically, obscurity (*asapheia*) is more effective (and desirable) than clarity; these remarks follow his brief discussions of allegory (in the grand style) and reticence (in the forceful style) respectively. 'Demetrius' is evidently talking about obscurity of expression, which leaves things for the listeners or readers to figure out (*to hyponoumenon*) and which does not necessarily condemn them to 'mental' obscurity—the text, that is, will still aim to be ultimately intelligible (see Kustas 1973 on obscurity as a rhetorical quality).

[5] Abbreviated syllogisms used in rhetorical argumentation; see Burnyeat 1994.

Clarity of expression, by which the sender (see 2.1) aims at generating clarity in the receiver as the 'end-state' of communication, may operate at distinct levels. In Leech's (1983: 100) words:

> There are two kinds of clarity. One kind consists in making unambiguous use of the syntax and phonology of the language in order to construct a clear text. Another type of clarity consists in framing a clear message, *ie* a message which is perspicuous or intelligible in the sense of conveying the intended illocutionary goal to the addressee.

In other words, one may express oneself clearly in that one uses language in a comprehensible and unambiguous way, or in that what one wants to say is easy to understand. A reticent statement may be perfectly clear from the point of view of the form, but less clear—or altogether obscure—from the point of view of the content, or, more precisely, as regards the relationship between the so-called 'sentence-meaning' and 'speaker-meaning' (see Levinson 1983: 17). This was already noted by Quintilian (*Inst.* 8.2.20–1), who remarks that there are expressions *quae verbis aperta occultos sensus habent*.

The ancient distinction between clarity concerning words (*onomata*) and clarity concerning the subject-matter (*pragmata*) points in a similar (but not exactly the same) direction.[6] Apart from being an intrinsic quality of the content, which should be easy and drawn from common knowledge (cf. e.g. Theo *Prog.* 80.11–12 Patillon and Anon.Seg. 81), clarity concerning the subject-matter (henceforth 'content-clarity' or 'understandability') is achieved through the linear construction of discourse (cf. D.H. *Th.* 52) and the appropriate use of coherence devices.[7] In particular, the *Rhetoric to Alexander* (30.6 1438a26–32) suggests that facts should be presented in chronological

[6] See *Rh.Al.* 30.6 1438a26–7, D.H. *Lys.* 4, Theo *Prog.* 80.9–11 Patillon, Anon.Seg. 80–4; in the Latin tradition cf. *Rh.Her.* 1.15 and Cic. *Inv.* 1.29.

[7] E.g. repetition, signposts, or hypophora; see for instance D.H. *Is.* 14, Tib. *Fig.* 13.1–13 Ballaira, [Aristid.] *Rh.* 1.134, and Hermogenes on *eukrineia*, *Id.* 1.4 235.1–241.9 Rabe. Pseudo-Aristides (*Rh.* 1.133–5) presents a refinement of the dichotomy between clarity concerning words and clarity concerning facts; alongside clarity of expression (*kata apangelian*), he distinguishes between clarity of thought (*kata gnome*) and clarity of figure (*kata schema*). Clarity of thought involves the selection and organization of the contents (cf. the remarks on the obscurity caused by long digressions, *Rh.* 1.55), whereas clarity of figure is about rhetorical devices that increase the coherence of discourse ('reminders'—see Patillon 2002: 42–3—and signposts).

order, avoiding shuffling and undue digressions.[8] The same is recommended by Theon's *Progymnasmata* (80.12–81.4 Patillon, of which Anon.Seg. 80–4 is a summary), which add that certain subjects may be intrinsically less perspicuous than others (for instance, dialectics and geometry). Another coherence device that is occasionally discussed in connection with clarity is repetition (Demetr. *Eloc.* 197). The primary effect of this device is mnemonic, just as is that of the other features of 'content-clarity' (Vatri 2015a: 759–66), which emphasizes the cognitive effect of this type of *sapheneia*. Repetition, however, should not be indulged in, for it may result in confusion (Theo *Prog.* 80.28–9 Patillon, Anon.Seg. 82).

Failure at 'content-clarity' does not entail the 'unprocessability' of the verbal input but makes it difficult for the receiver to get a clear grasp of the subject-matter. 'Form-clarity', in turn, is closely connected to grammaticality, and it is not surprising that Aristotle includes rules about clarity in his discussion of linguistic correctness (*hellenismos*, *Rh.* 1407a19–b25, cf. Innes 1985: 256).[9] *Hellenismos* and *sapheneia* appear side by side as two of the four *aretai lexeos* identified by Theophrastus (fr. 684 Fortenbaugh = Cic. *Orat.* 79). Likewise, they are both included in the Stoic list of five *aretai* (D.L. 7.59), which was developed between the third and the second centuries BC.[10] According to Dionysius of Halicarnassus, who draws on the Peripatetic tradition, *sapheneia* is one of the necessary (*ἀναγκαῖαι*) *aretai*. These are to be distinguished from the ancillary (*ἐπίθετοι*) ones in that they are essential to good style and should be present in all texts (*logoi*). In Bonner's words (1939: 19), 'to lack an "essential" virtue is to commit an unpardonable offence', which implies that *sapheneia* is by no means confined to a specific style (D.H. *Th.* 22–3; see Van Wyk Cronjé 1986: 136–61). In this perspective, *sapheneia* appears as a condition for 'rhetorical grammaticality', as Aristotle had already recognized (cf. Russell 1981: 135–7). Dionysius admits that the necessary *aretai* may be foregrounded in certain styles more than others—he mentions, for instance, that *sapheneia* is often recognized

[8] Cf. also D.H. *Th.* 9 and *Pomp.* 3.13, Phld. *Rh.* 1.157 Sudhaus, col. 14.10–11, [Aristid.] *Rh.* 1.133, Hermog. *Id.* 1.4 237.20–238.5 Rabe, cf. 1.4 235.15–16 Rabe, Men. Rh. 402.29–32 Spengel.

[9] See also de Jonge 2008: 272 on Dionysius of Halicarnassus' presentation of Thucydides' linguistic obscurity as giving the impression of solecism (*Th.* 53).

[10] See Baratin and Desbordes 1987: 43–5 and Atherton 1993: 87–92 for different views on the interaction and possible hierarchies among the Stoic *aretai*.

as a quality of *diegesis* (narrative)[11]—but this does not make them less necessary in other styles (D.H. *Dem.* 34, cf. *Dem.* 11). This is reminiscent of the assignment of *sapheneia* to the plain style by 'Demetrius' but clashes with his licensing of *asapheia* in the grand and forceful styles, which, as I have argued, applies to obscure expressions that still aim at inducing clear cognition in the receiver's mind. Arguably, this task is impossible if the linguistic message is unprocessable. The only level at which obscurity may be deliberately sought while preserving the effectiveness of communication (which results in a 'good style') is that of 'content-clarity'. Allegory and reticence—two examples of 'good obscurity' made by 'Demetrius'—generate precisely this type of *asapheia*: they both aim at communicating something and need not use language that is hard to process, but what they aim to communicate is not explicit. As a matter of fact, Theon (*Prog.* 81.4–7) mentions the omission of necessary information and allegory precisely under the heading of violations of clarity concerning the subject-matter (cf. Hermog. *Id.* 1.4 240.25–241.5 Rabe on reticence). Interestingly, intentional obscurity was identified and stigmatized by Philodemus (*Rh.* 1.156–7 Sudhaus, col. 13.15–25) as a trick for concealing the fact that one has nothing good to say—a remark which is reminiscent of Aristotle's analogous comment on ambiguity (*Rh.* 1407a32–9). The 'deceptive' use of obscurity would later be considered a rhetorical technique in its own right in imperial rhetoric (cf. Anon.Seg. 104, quoting Harpocration) and consists precisely in the disruption of 'content-clarity' through the scrambling of the presentation of the facts (Anon.Seg. 88): when *diegesis* should be made obscure, *lexis* should remain as clear as possible, so as to create an illusion of *eumatheia* ('easy learning', Anon.Seg. 142, probably quoting Harpocration, cf. Patillon 2005: 97, n. 4).[12] If we accept, on these grounds, that 'Demetrius' refers to 'content-*sapheneia*', we may resolve the apparent contradiction between his views and those of the tradition of which he is part.

To sum up, the domain in which *sapheneia* operates as a necessary feature of speech—an essential component of 'rhetorical grammaticality'—is essentially that of the processability of the message

[11] Cf. for instance the *Rhetoric to Alexander* (30.4 1438a19–22) and, a few generations after Dionysius, Theon (*Prog.* 79.20–1) and the Anonymous Seguerianus (63).

[12] The relationship between *eumatheia* and *sapheneia* is evident in Men.Rh. 347.10–11 Spengel; cf. also *Rh.Al.* 30.5 1438a22 (*σαφῶς μέν, ὅπως καταμάθωσι, κτλ.*).

form. In other words, it is a requirement of 'good style' that each speech act should be comprehensible from a syntactic, phonological, lexical, and semantic point of view. This is a requirement of all texts, and all the more so for those to be processed in an on-line, real-time situation, as shown above. Now, the question arises whether this requirement was actually met by ancient prose scripts. This question has often been addressed indirectly by scholars who have attempted to argue that certain texts were not optimized for on-line processing based on the presence of linguistic features that would hinder comprehension (e.g. Yaginuma 1995, Gagarin 1999, Denniston 1950: 15, Kelly 1996: 155–6, Rossi 1983: 8–11, and Worthington 1991a). Features commonly regarded as difficult include 'extreme' hyperbaton (Rossi 1983: 8–11 and Gagarin 1999: 170; cf. Hoffer 2007 on Latin), long sentences (e.g. Denniston 1950: 15, Yaginuma 1995: 133, Gagarin 1999: 170–1, MacDowell 2009: 398–9), abstract nouns (Yaginuma 1995: 137–9, MacDowell 2009: 398), or complex hypotaxis (Yaginuma 1995: 136, Gagarin 1999: 169; cf. Allan 2007: 93). Some of these features are identified on the basis of the scholar's own empirical judgement, which is less than ideal if one wishes to address this problem scientifically. Other features, as we shall see, had already been singled out in the ancient rhetorical literature as factors which disrupt *sapheneia*. In the absence of native speakers of Classical Greek, these primary materials provide a natural starting point for the scientific reconstruction of the native comprehension of a dead language.

4.2 PRECEPTS AND EXAMPLES

The ancient Greek rhetorical literature provides a wealth of observations about the grammatical and textual features which generate *sapheneia* or disrupt it, resulting in *asapheia*. As I have argued, *asapheia* is not necessarily to be avoided, provided that it neither disrupts the processability of the text nor fully obliterates its intelligibility. This means that *asapheia* may obfuscate the connection between the linguistic message and the speaker's communicative intention, but it should not generate processing difficulty. As a rhetorical requirement, *sapheneia* consists first of all in preserving the optimal processability of the text. We shall now review the sources which describe the rhetorical devices by which *sapheneia* may be

obtained; where features of 'form-clarity' are explicitly distinguished from those of 'content-clarity' (e.g. in the *Rhetoric to Alexander*, Theon's *Progymnasmata*, and the Anonymous Seguerianus), only the observations concerning the former will be examined.

Much of the ancient discussion of linguistic difficulty is concerned with ambiguity (see e.g. Demetr. *Eloc.* 196, Longin. *Rh.* fr. 48.220 Patillon–Brisson; in Latin, Quint. *Inst.* 8.2.16). This is a feature of 'content-obscurity' in that it obfuscates the connection between message and communicative intention through the multiplication of possible meanings.[13] However, this multiplication of plausible interpretations stems from the multiple ways in which the linguistic form may be analysed (cf. Lyons 1977: 440). As Theon's *Progymnasmata* mention (76.25–34 Patillon), *asapheia* may derive, among other things, from the ambiguous character of either single words (polysemy) or multiple words (cf. Quint. *Inst.* 7.9.1 and Arist. *SE* 4 166a14–22 on types of ambiguity). As an example of a polysemous noun that may make the text of a law unclear, Theon mentions the word *παῖς*, which may indicate a boy, someone's child, or a slave (*Prog.* 81.25–8 and 129.31–130.1 Patillon; cf. Quint. *Inst.* 7.9.2). The solution to this class of problems, according to the *Rhetoric to Alexander* (25.6 1435b19–25), is to add some disambiguating co-text (cf. Anon.Seg. 87). This solution would probably not work for a seeming case of polysemy mentioned by Aristotle in the *Poetics* (1461a25), whose ambiguity is only revealed precisely by the context itself (cf. Schreiber 2003: 28–30). A passage from the *Iliad* (10.252–3) reads *παρῴχηκεν δὲ πλέων νὺξ / τῶν δύο μοιράων, τριτάτη δ' ἔτι μοῖρα*

[13] Ambiguity (*amphibolia*) is primarily an object of philosophical (and not only linguistic) interest, given its possible moral implications. From a Stoic perspective, ambiguities are dangerous in that they may block access to the truth (see Atherton 1993: 128–30); an ethical vein also surfaces in Aristotle's *Rhetoric* (1404b37–9), which states that homonyms are used by sophists for their misdeeds (*κακουργίαι*). Several examples given by practical rhetoricians are also presented by Aristotle in the *Sophistical Refutations*, and Theon recycles Stoic material (cf. Atherton 1993: 34 and *passim*), even though he deviates from the Stoic orthodoxy (Atherton 1993: 480). As Atherton (1993: 347–9) remarks, ambiguity and obscurity are to be kept distinct from a philosophical perspective; however, the subsumption of the former into the latter is straightforward from a rhetorical point of view. As a feature of 'content-obscurity', ambiguity may be intentionally sought, but this would be the case more in philosophical or entertaining literature (cf. Atherton 1993: 484 and Bons 1993) than in 'pragmatic' texts composed for public decision-making debates (cf. Atherton 1993: 88). Digging for ambiguities in literary texts can be conceived of as a philosophical/philological exercise in its own right (cf. Arist. *Po.* 1461a32–b25, cf. Atherton 1993: 99–100).

λέλειπται; here the adjective πλέων (which Aristotle singles out as ambiguous) may either be interpreted in the sense of 'more than', which gives the arithmetically awkward meaning 'more than two-thirds of the night have passed, and the third part is left', or in the sense of 'the greater part', which would give the meaning 'the night has passed for the greater part of its two parts' (that is, 'more than half of the night has passed'). The specification that a third is left is there as a quantification of the excess of the half, added by the poet for the sake of precision (cf. Lucas 1972: 244). As Schreiber (2003: 29) remarks, the fragment of Aristotle (fr. 161 Rose) explaining this difficulty discusses at length the interpretation of τῶν δύο μοιράων rather than that of πλέων, and it is likely that the ambiguity detected by Aristotle is one deriving from the combination of words, and is not a case of polysemy after all; in Schreiber's words, 'the amphiboly [...] is the phrase πλέων νὺξ τῶν δύο μοιράων, which Aristotle elliptically marks by citing the opening word'.

Theon is equally concerned about the reverse case, that of synonymy (cf. [Aristid.] *Rh.* 1.135): calling the same referent (e.g. a sword) a number of different names (ἄορ, ξίφος, φάσγανον, μάχαιρα) would give the impression that one is talking about a number of different concepts and be a source of *asapheia* (*Prog.* 130.1–5 Patillon, see Lys. 10.6–8 for an early example of a rhetorical argument based on such a fallacy).[14] In general, as far as vocabulary is concerned, virtually all rhetoricians recommend using *kyria* (or *oikeia*) *onomata*,[15] standard words in their literal sense (defined negatively in Arist. *Po.* 1458a21–3, cf. Dufour and Wartelle 1973: 102, n. 7). This implies that metaphors must be kept under control, both as regards their quality (how far-fetched they are)[16] and their quantity;[17] in Aristotle's view, lexical effects (including the use of *glottai*—unusual, obsolete, or foreign words, or

[14] At 84.5–10 Patillon, instead, Theon presents the accumulation of synonyms in a sentence as superfluous and contrary to brevity.

[15] Arist. *Po.* 1458a17–19, cf. 1461a9–15, *Rh.* 1404b5–6; *Rh.Al.* 25.1 1435a32 and 30.7 1438a35, Demetr. *Eloc.* 192, Phld. *Rh.* 1.159 Sudhaus, col. 16.20–4 and 1.161, col. 19.6–12 D.H. *Lys.* 4—connecting *akyrologia* and *asapheia* and arguing that *onomata* should follow *pragmata*, perhaps *contra* Phld. *Rh.* 1.159 Sudhaus, col. 16.24–7—*Dem.* 5 and 13, *Th.* 52, *Pomp.* 4.3, Theo *Prog.* 76.26–7, 81.8–25, Anon.Seg. 85, Longin. *Rh.* fr. 48.223–5 Patillon–Brisson, Ruf.Rh. 18.1, [Aristid.] *Rh.* 1.135 and 171.

[16] Cf. also Arist. *Rh.* 1405a8–9 on what makes a good metaphor (clarity is mentioned first) and the full discussion which follows (1405a10–b19).

[17] Arist. *Po.* 1458a23–31, *Rh.* 1406b5–19; cf. Theo *Prog.* 81.14–18, 129.25–30 Patillon, Hermog. *Id.* 1.3 229.9–18 Rabe.

neologisms, cf. Dufour and Wartelle 1973: 102, n. 5) should be blended in competently so as to elevate the style of a text without disrupting its clarity (Arist. *Po.* 1458a32–1459a13, cf. *Rh.* 1404b8–12, 26–37)—incidentally, the optimal combination of clarity, elevation, and propriety is precisely what the Aristotelian *arete lexeos* consists in (compare *Rh.* 1404b1–5 and 35–7, cf. Innes 1985: 255; see also Longin. *Rh.* fr. 48.208–16 Patillon–Brisson). 'Demetrius' suggests that certain metaphors may be clearer (or, one may say, may be more effective at generating *sapheneia*, cf. Arist. *Rh.* 1410b13–15) and more 'spot-on' than the *kyrion onoma* which they replace (*Eloc.* 82); their use, however, is restricted to the grand style (*Eloc.* 190–1), just as is the case with unusual words (*Eloc.* 77, cf. Hermog. *Id.* 1.3 229.15 Rabe).

As to obscurity deriving from multiple words, Theon (*Prog.* 76.30–4 Patillon) gives the following example:

(1) ἐγὼ σ' ἔθηκα δοῦλον ὄντ' ἐλεύθερον.
'I made you a free man a slave.'

As Theon explains, it is unclear whether it is a free man (ὄντ' ἐλεύθερον) who was enslaved (ἔθηκα δοῦλον) or a slave (δοῦλον ὄντα) who was freed (ἔθηκα ἐλεύθερον). This iambic is also cited by Aristotle (*SE* 4 166a23–38) in his discussion of ambiguities deriving from different ways of joining and separating syntactic constituents (*synthesis* and *diairesis*).

Other constructions that may be interpreted in more than one way, according to Theon, are those which contain elements whose 'association' is unclear (ὅταν τι σημαῖνον μόριον ἄδηλον ᾖ, μετὰ τίνος συντέτακται, *Prog.* 82.8–12):

(2) οἱ δὲ καὶ ἀχνύμενοί περ ἐπ' αὐτῷ ἡδὺ γέλασσαν.
'But in spite of being in grief about him they laughed with pleasure.' (*Il.* 2.270)

Theon comments that this line might be read as indicating that the Achaeans were angry either with Thersites or at the drawing down of the ships—in other words, the anaphoric pronoun αὐτῷ could refer to two different entities. However, as Atherton (1993: 363) remarks, 'the Homeric context reveals no such "drawing down", the two possible referents being Thersites and Odysseus, in their famous confrontation'. On the other hand, this example may be considered ambiguous in another respect as well: the propositional phrase ἐπ' αὐτῷ may be attached either to ἀχνύμενοι, as in the interpretation presented above,

or *γέλασσαν*, giving the meaning 'they laughed at him'. This possibility is not illustrated in the *Progymnasmata*. Theon's other example of 'syntactic'[18] ambiguity concerns the unclear assignment of the correct antecedent to a relative pronoun:

(3) *δῆμον Ἐρεχθῆος μεγαλήτορος, ὅν ποτ' Ἀθήνη*
θρέψε Διὸς θυγάτηρ, τέκε δὲ ζείδωρος ἄρουρα.

'People of great-hearted Erechtheus, whom once Athena, daughter of Zeus, nourished, and the corn-bearing earth generated.' (*Il.* 2.547–8)

In this passage, either Erechtheus or the people may be taken as the object of the verbs *θρέψε* and *τέκε* (*Prog.* 82.13–18 Patillon), since both of these entities are designated by masculine nouns and may be referred to by the relative pronoun *ὅν*. Once again, the ambiguity may be said to be connected to the syntactic attachment of the relative clause to either antecedent, rather than to concern only the reference of the relative pronoun.

Attachment difficulties are also mentioned by pseudo-Hermogenes (*Meth.* 35 453.7–13 Rabe), who reports that the following sentence of Thucydides is regarded by some as ambiguous:

(4) *στασιάσαντες δὲ ἐν ἀλλήλοις ἔτη πολλά, ὡς λέγεται, ἀπὸ πολέμου τινὸς τῶν προσοίκων βαρβάρων ἐφθάρησαν.*

'Having been at odds with each other for many years, as they say, by reason of some war with the neighbouring barbarians they were destroyed.' (Th. 1.24.4)

The prepositional phrase *ἀπὸ πολέμου τινός* ('by reason of some war') may be attached to either *στασιάσαντες* ('having been at odds by reason, etc.') or *ἐφθάρησαν* ('they were destroyed by reason, etc.'). Pseudo-Hermogenes rejects the latter interpretation on syntactic grounds—he must have regarded it as unidiomatic, if not ungrammatical (*οὐ δεῖ γὰρ λέγειν 'ἀπὸ πολέμου ἐφθάρησαν'*). In general, pseudo-Hermogenes rejects the idea that sentences that admit only one syntactically or semantically correct interpretation are ambiguous (*Meth.* 35 452.21–3 Rabe), even when the wrong interpretation is

[18] See Atherton 1993: 361–4 on the terminological vagueness of *συντάσσω* and related words in the Stoic tradition.

syntactically correct and semantically not absurd if the sentence is examined out of context (more on this below).

Along these lines, Theon remarks in the rhetorical exercise concerning the interpretation of laws that obscurity comes about 'whenever a word placed in the middle may give different senses if it is construed with the words that precede it or with those that follow it' (*ὅταν ἐν μέσῳ τι κείμενον ὄνομα δύνηται συνταττόμενον ἢ τοῖς πρὸ αὐτοῦ ἢ τοῖς μετ' αὐτὸ διάφορον διάνοιαν ἀποτελεῖν*, *Prog.* 130.9–23 Patillon), with the following example:

(5) *ὁ νικήσας ἐν πολέμῳ στρατηγὸς ἀνατιθέτω τοῦ Ἄρεως ἄγαλμα χρυσοῦν ἔχον δόρυ.*

'The general who won at war shall dedicate a statue of Ares golden having a spear.'

This sentence is ambiguous, he says, 'for what is said is either "a golden statue" (*ἄγαλμα χρυσοῦν*) or "a golden spear" (*χρυσοῦν δόρυ*)' (cf. Quint. *Inst.* 7.9.7–8, with a Latin version of the same example). This type of ambiguity was already singled out by Aristotle (*Rh.* 1407b14–18), who quotes the beginning of the book of Heraclitus to illustrate the difficulty of supplying punctuation to his writings. This is because, as Aristotle observes, it is often hard to discern what is to be attached to the preceding or the following part of the sentence (*τὰ γὰρ Ἡρακλείτου διαστίξαι ἔργον διὰ τὸ ἄδηλον εἶναι ποτέρῳ πρόσκειται, τῷ ὕστερον ἢ τῷ πρότερον*, *Rh.* 1407b14–17):

(6) *τοῦ λόγου τοῦδ' ἐόντος ἀεὶ ἀξύνετοι ἄνθρωποι γίγνονται.*

'Of this reason that exists always ignorant men are.' (Heraclit. DK22 B1)

In this example, the adverb *ἀεί* is located between the participle *ἐόντος* and the verb phrase *ἀξύνετοι ἄνθρωποι γίγνονται*, and it is not clear which of the two it modifies. Theon presents a similar case as an example of different interpretations deriving from *synthesis* and *diairesis* (Theo *Prog.* 130.14–23 Patillon):

(7) *ὁ ψευδομαρτυρῶν ἁλοὺς τρὶς χιλίας διδότω.*

'The false witness taken three times a thousand [drachmae] must give.'

Theon observes that the adverb *τρίς* ('three times') may be construed with either the preceding or the following word ('taken three times' vs 'three

thousand'). Likewise, in the *Poetics* (1461a23–4) Aristotle remarks that different *diaireseis* in a sentence of Empedocles give different meanings:

(8) *αἶψα δὲ θνήτ' ἐφύοντο τὰ πρὶν μάθον ἀθάνατ' εἶναι ζωρά τε πρὶν κέκρητο.*

'Suddenly mortal became things that previously knew immortality, and pure previously had been commingled.' (Emp. DK31 B35.14–15)

This quotation is textually problematic and Aristotle does not comment on the example (cf. Lucas 1972: 244, Janko 1987: 149, Tarán and Gutas 2012: 458–9); the common interpretation of this passage is that Aristotle alludes to the fact that *πρίν* ('previously') may be analysed as a modifier of either *ζωρά* ('things that previously were pure') or *κέκρητο* ('pure things had previously been commingled').

Obscurity often derives from ambiguous double-accusative constructions (cf. Atherton 1993: 394), another case singled out by Theon (*Prog.* 82.28–83.9, cf. Quint. *Inst.* 7.9.6): infinitival constructions with both a subject and a direct object in the accusative often admit more than one semantically plausible interpretation. Examples of such constructions are given by Aristotle in the *Sophistical Refutations* (e.g. *βούλεσθαι λαβεῖν με τοὺς πολεμίους* 'to want me the enemy to take', 4 166a8) and are found in a number of rhetorical treatises. The *Progymnasmata* quote the following sentence of Demosthenes:

(9) *ἴσασιν Εὐαίωνα πολλοὶ τὸν Λεωδάμαντος ἀδελφὸν ἀποκτείναντα Βοιωτὸν ἐν δείπνῳ.*

'Many know that Evaeon the brother of Leodamantos Boeotos killed during a meal.' (D. 21.71)

Here, Theon detects two concurrent ambiguities; namely, that concerning who killed whom, and that concerning who is the brother of Leodamantos. The *Rhetoric to Alexander* (25.3 1435b5–10) identifies the same type of ambiguous construction as a form of confused composition (*σύνθεσις συγκεχυμένη*), as exemplified by the sentence:

(10) *δεινόν ἐστι τοῦτον τύπτειν τοῦτον.*

'It is terrible that this man this man beats.'

In this example, once again, it is unclear who beats whom; the treatise suggests that one should rather rephrase the sentence as *δεινόν ἐστι τοῦτον ὑπὸ τούτου τύπτεσθαι* ('it is terrible that this man is beaten by

this man'). The demonstrative pronouns are generic placeholders (equivalent to 'somebody' in modern dictionary entries), and the fact that they are identical (which means that, in principle, they may refer to the same entity, whether or not this would be an idiomatic way to express reflexivity) must not be read as a factor that contributes to the ambiguity of the sentence. Actually, this type of ambiguity is seemingly alluded to in the immediately subsequent section of the *Rhetoric to Alexander* (25.4 1435b11–15).

The treatise states that a sentence like *οὗτος ὁ ἄνθρωπος τοῦτον τὸν ἄνθρωπον ἀδικεῖ* ('this man wrongs this man') is made clear by the presence of *arthra*—a grammatical term which here should not indicate the article alone, but its use in combination with a demonstrative.[19] The contribution of *arthra* to *sapheneia* is explained by the consideration that without such *arthra* the sentence would become obscure (*νῦν μὲν ἐγγενόμενα τὰ ἄρθρα σαφῆ ποιεῖ τὴν λέξιν, ἐξαιρεθέντα δὲ ἀσαφῆ ποιήσει*). However, the treatise cursorily warns the reader that in some cases the opposite may happen (*ἔσθ' ὅτε δὲ συμβαίνει καὶ τὸ ἀνάπαλιν*, cf. 25.1 1435a34–6). The interpretation of this rather compressed passage is not entirely straightforward. If the *Rhetoric to Alexander* suggests that a sentence like *ὁ ἄνθρωπος τὸν ἄνθρωπον ἀδικεῖ* is obscure to begin with and is made clear by the addition of the same *arthron* (*οὗτος ὁ*) to both nouns, it follows that *arthra* help to disambiguate the entities (persons, objects, etc.) referred to by the nouns, even when the same demonstrative is used. While it is easy to see how the use of different demonstratives helps to disambiguate between entities (e.g. 'this man' vs 'that man'), the attribution of the same effect to sequences of identical demonstratives is rather counterintuitive. Apart from failing to distinguish entities from one another (e.g. 'this man' vs 'this man'), such sequences may obfuscate otherwise clear distinctions; for instance, a sentence like 'the book [about which we are talking] was inspired by this book' would become (even more) obscure if both entities were referred to as 'this book'. This, however, is especially true on paper; in oral performance, demonstratives may be accompanied by gestures of some kind (physical deixis), which would be chiefly effective when the entities mentioned by the speaker are real and present (cf. 4.4.2). It is conceivable that this passage of the *Rhetoric to Alexander* was

[19] Cf. Chiron 2002: 166, n. 434 and 2010: 317 and Schramm 2005: 204–5; see also van Bennekom 1975 on the history of the term.

written[20] with both *anagnosis* and *hypokrisis* in mind (see 1.3, 2.3, and 3.1; cf. Chiron 2002: 168, n. 442 and see below).

Going back to the ambiguity of constructions in which two accusatives appear, the same example is given by both pseudo-Aristides (1.171) and pseudo-Hermogenes (*Meth.* 35 453.3 Rabe):

(11) *ὦ Ζεῦ γένοιτο καταβαλεῖν τὸν σῦν ἐμέ.*

'O Zeus, be it that the boar my arm strikes down.' (fr. adesp. 188 Nauck^2 = *TrGF* II)

Similar ambiguities may arise with subjects and predicates of a copulative verb expressed in any case, including the nominative, as illustrated by Theon through a quotation of Herodotus, which he 'inflects' in the oblique cases:

(12) *εἰσὶ δὲ καὶ Αἰγύπτιοι Κολχοί.* (*Κολχῶν δὲ ὄντων Αἰγυπτίων, Κολχοῖς δὲ οὖσιν Αἰγυπτίοις*)

'Egyptians Colchians are.' (Hdt. 2.104)

Theon suggests that the article works as a disambiguator (*οἱ Κολχοί* will not be mistaken for the predicate: *Prog.* 83.10–14 Patillon; the article, incidentally, is transmitted by most manuscript families: cf. Patillon and Bolognesi 1997: 45, n. 235).[21]

The accusative may occur in ambiguous constructions with the infinitive if it may plausibly (from a semantic point of view) be interpreted as the subject or the object.[22] Theon quotes the text of a law:

[20] On the attribution of the treatise to Anaximenes of Lampsacus see Chiron 2002: cv–cvii and 2007: 101–4.

[21] Patillon's (1997: 45) interpretation excludes the accusative from the cases that, in such ambiguous constructions, benefit from the addition of the article, but this view is hard to defend; cf. Kennedy's (2003: 32) and Atherton's (1993: 383) translations. Atherton's (1993: 397) remark that 'Theon does not realise that the addition of one definite article has failed to clear up the ambiguity as to the identity of Leodamas' brother in his first illustration [. . .] but the device would serve to indicate the subject of the participle' is a moot point. The construction in example (9) to which Atherton refers is a different one, and while the identifiability of a noun (signalled by the article) and the non-identifiability of the other can indicate that the former is the subject and the latter is the predicate in a copulative construction such as that of sentence (12)—but see Bakker 2009: 193 with n. 88 for a possible counterexample—this need not be the case in a transitive construction.

[22] Aristotle (*SE* 4 166a8–14) discusses a similar type of ambiguity involving neuter nouns/pronouns, or participles in whose inflection the masculine accusative singular and the direct cases of the neuter plural are homonyms (e.g. forms ending in *-ντα*),

(13) *Πιττακός [φησι] νέμεσθαι πατέρα καὶ μητέρα τὴν ἴσην.*
'Pittacus says that mother and father they should share equally.'

The ambiguity identified by Theon consists in the fact that it is unclear whether the children will share their parents' possessions (which he takes to be indicated by *πατέρα καὶ μητέρα*) or vice versa (*Prog.* 130.5–9). Similarly, pseudo-Hermogenes (*Meth.* 35 452.23–453.2 Rabe) reports that certain readers find the following passage of Homer ambiguous:

(14) *θεοῖσι δὲ θῦσαι ἀνώγει / Πάτροκλον ὃν ἑταῖρον.*
'He commands to sacrifice to the gods Patroclus, his companion.' (*Il.* 9.219–20)

Pseudo-Hermogenes refuses to recognize such constructions as ambiguous precisely on semantic grounds—one of the two interpretations is absurd (*τὴν διάνοιαν εἶναι ἄτοπον τὴν ἑτέραν*); in this case, it is impossible to interpret the accusative *Πάτροκλον* as the object of *θῦσαι*, since Homer cannot mean that Achilles designated Patroclus as a sacrificial victim. Nonetheless, the sentence is syntactically ambiguous and must be interpreted before it is classified as nonsensical (cf. Lyons 1977: 419). If taken in isolation, it would be disambiguated only by the reader's/listener's background knowledge of the Greek epic world. The same would be the case if the sentence were read/heard in the context of the *Iliad*; however, the opposite interpretation could be judged plausible in the context of a hypothetical 'alternative' *Iliad* (cf. Lyons 1977: 419–21).

Certain rhetoricians mention the intrinsic clarity of grammatical cases regardless of the risk of ambiguity deriving from their syntactic versatility. The pseudo-Hermogenic *Progymnasmata* (2.5), for instance, compare the direct figure (*orthon schema*) to the oblique figure (*enkeklimenon schema*) in narrative passages. The former consists of direct statements, which make use of the nominative (the *onomastike ptosis*, as in *Μήδεια ἦν Αἰήτου θυγάτηρ*), whereas the latter is characterized by constructions using other cases (e.g. *Μήδειαν τὴν Αἰήτου θυγατέρα λόγος ἐρασθεῖσαν Ἰάσονος*). According to the *Progymnasmata*, the direct figure is clearer than the oblique, and as such it is more appropriate to historical narratives than to those in

which may be interpreted as either the subject or the object of transitive verbs (cf. Schreiber 2003: 28).

debating texts (ἀγῶνες)—the traditional connection between *sapheneia* and the plain style lurks in the background.[23] Analogously, 'Demetrius' (*Eloc.* 201) had already suggested that narrative passages should begin either with the nominative (here called the *orthe ptosis*, e.g. *Ἐπίδαμνός ἐστι πόλις*, Th. 1.24.1) or, unlike the *Progymnasmata*, with the accusative (e.g. *λέγεται Ἐπίδαμνον τὴν πόλιν*); all other cases would generate *asapheia* and irritate both the speaker and the listener. In the treatise of 'Demetrius', this prescription immediately follows his remarks on natural word order—the ordinary, unaffected way of arranging words that should be pursued when composing in the plain style (*Eloc.* 199–200). Such discussions in antiquity would involve a 'morphological principle', as testified by Dionysius of Halicarnassus in the description of his failed attempts at verifying that natural word order is a necessary starting point for artistic composition (*Comp.* 5.9, cf. de Jonge 2008: 280). In this passage, which de Jonge (2007: 215) effectively calls a 'foil for his actual theories on artistic devices', Dionysius reports that, among other things, he failed to verify that in stylistically beautiful texts direct forms (*ortha*) of verbs always precede the 'oblique' (*enkeklimena*) forms—as we have seen, these terms respectively indicate the nominative and the oblique cases as far as nominal inflexion is concerned (cf. also de Jonge 2008: 305), and when it comes to verbs they should refer to the indicative as opposed to the other moods (see de Jonge 2008: 304–8 for a detailed discussion). This and the other principles of natural word order explored by Dionysius are based not on a concept of 'nature' referring to 'everyday language or artless expression, but rather to the rules of logic', as de Jonge (2008: 273) remarks. 'Demetrius', by contrast, 'presents an account of natural word order that is pragmatic rather than grammatical' (de Jonge 2008: 316). 'Demetrius' suggests that the natural order requires that the topic of the sentence—which may be impressionistically associated with the grammatical subject, which, in turn, is expressed by the nominative or the accusative—should be presented immediately (e.g. *Ἐπίδαμνός ἐστι πόλις ἐν δεξιᾷ ἐσπλέοντι εἰς τὸν Ἰόνιον κόλπον*, Th. 1.24.1); the reverse (and consequently less

[23] In D.H. *Comp.* 4.9 contrasts a 'direct' and 'debating' style (*orthon kai enagonion plasma*) with a 'leisurely' (*hypagogikon*) and 'historical' style. As de Jonge (2008: 386) suggests, the adjective *orthon* should refer to the systematic (direct, straightforward) presentation of the subject-matter and does not have to do with *sapheneia* as such.

natural) arrangement is still acceptable in the plain style (cf. de Jonge 2007: 221) and is not described as *asaphes*.

Moving on to another feature of word order, a number of treatises warn against hyperbaton (cf. 4.3.5) as a potential source of difficulty. The first mention of this term in a literary context (see Chiron 2010: 311–13 on its semantics) appears precisely in the discussion of an ambiguous sentence of Simonides as told by Plato in the *Protagoras* (343c–e, cf. Sluiter 1990: 9–10):

(15) ἄνδρ' ἀγαθὸν μὲν ἀλαθέως γενέσθαι / χαλεπόν.
'A man good truly to be(come)[24] is difficult.' (Simon. *PMG* 542)

Socrates argues that ἀλαθέως modifies χαλεπόν instead of ἀγαθόν, in spite of the fact that the latter adjective is adjacent to the adverb in the linear order of the sentence. If this were the case, Simonides would mean is that 'it is truly hard to become a good man', not that 'it is hard to become a truly good man' (or 'to truly become, etc.'). This interpretation would imply that the sentence contains a hyperbaton (ὑπερβατὸν δεῖ θεῖναι ἐν τῷ ᾄσματι τὸ ἀλαθέως) by which ἀλαθέως is 'transposed' to an unnatural location (cf. Sluiter 1990: 10, n. 28 and Chiron 2010: 315).

The *Rhetoric to Alexander* mentions hyperbaton as a source of obscurity (25.1 1435a37, 25.3 1435b5–6, and 30.7 1438a36–7) but examples are missing (probably because of a lacuna; cf. Chiron 2002: 168, n. 441 and 2010: 317). Philodemus (*Rh.* 1.160 Sudhaus, col. 18.11–22) suggests that hyperbata should be used in moderation and that, when unavoidable, they should not extend over excessive distances. Similarly, Theon's *Progymnasmata* (82.21–4 Patillon) recommend avoiding 'Thucydidean' hyperbata, while praising the correct use of figure as such. Hyperbaton is mentioned in connection with *asapheia* only in the Anonymous Seguerianus (ch. 85), Rufus (18.1), and Tiberius (*Fig.* 45 Ballaira). Likewise, a scholion to Pindar's second Olympian (*Σ Pi. O.* 2.153 *ad* ll. 85–6) explains the poet's alleged metatextual reference to his own difficulty (see Most 1986) as justified by the abundance of hyperbata, without any further specification. Conversely, this figure is treated at length in pseudo-Hermogenes'

[24] See Beresford 2008: 239, n. 6. Alternatively, ἀγαθόν may be interpreted as an attribute of ἄνδρα instead of a predicate, which would give the translation 'It is difficult that a truly good man exists' (so Poltera 2008: 460).

On Method of Forceful Speaking (ch. 14) and is exemplified by three lines of the *Odyssey*:

(16) *ὦ φίλοι, οὐ γάρ τ᾽ ἴδμεν, ὅπῃ ζόφος οὐδ᾽ ὅπῃ ἠώς,*
οὐδ᾽ ὅπῃ ἠέλιος φαεσίμβροτος εἶσ᾽ ὑπὸ γαῖαν,
οὐδ᾽ ὅπῃ ἀννεῖται· ἀλλὰ φραζώμεθα θᾶσσον

'Friends—for we do not know where night or dawn are, or where the sun that shines on mortals goes under the earth, nor where it rises—but let us consider right away . . . ' (*Od.* 10.190–2)

Pseudo-Hermogenes describes the insertion of the parenthetical sequence *οὐ γάρ ... ἀννεῖται* as hyperbaton and regards it as contributing to *sapheneia*: if the parenthesis were not there, the reasons for taking the action of 'considering right away' would remain obscure ([Hermog.] *Meth.* 14.2). All other examples of hyperbaton in pseudo-Hermogenes are cases of hyperbaton by parenthesis (a 'conceptual hyperbaton'; cf. Lausberg 1998: 385, as opposed to hyperbaton by transposition, as defined in Tib. *Fig.* 32 Ballaira; see Chiron 2010: 313 and 329–30). Both types of hyperbaton are hinted at by Longinus (*Rh.* fr. 48.218–20 Patillon–Brisson) and described as irritating for the audience.

Hyperbaton by parenthesis corresponds to what Theon calls *metaxylogia* ('interpolation', *Prog.* 82.24–8 Patillon, cf. Atherton 1993: 378, n. 135); in order to preserve clarity, such insertions should not be exceedingly long (cf. *Prog.* 80.30–81.4 Patillon and [Aristid.] 1.55 on digressions—a feature of 'content-obscurity'—and Hermog. *Id.* 1.3 232.1, where a digression in the treatise is called 'hyperbaton'; see also Quint. *Inst.* 8.2.15). Digressions inserted in the middle of a sentence interrupting its flow correspond to the modern linguistic concept of parenthesis[25] and to what Greek theoreticians called *parenthesis* or

[25] Parenthesis is an 'elastic concept' (Schneider 2007: 3, 21, cf. Kaltenböck 2005) in modern linguistics, and it can be given a broad and a narrow definition (cf. Schwyzer 1939). Apart from main or coordinate clauses inserted within another clause (see Dehé and Kavalova 2007: 6–7 for the status of short 'comment clauses'), broadly defined parentheses include a vast range of clause types. Among others, non-restrictive relative clauses, clausal adjuncts (that is, subordinate clauses that do not complete the syntax of the superordinate clause, but are simply 'added' to it, e.g. '*as you probably know*', as opposed to necessary '*that you are good*' in '*I know that you are good*'), elliptical clauses, appositions, vocatives, and interjections have all been regarded as instances of parenthesis (Kaltenböck 2005: 26–7, cf. Devine and Stephens 1994: 416, Ziv 1985: 181, Dehé and Kavalova 2007: 1–4). A broad definition is also adopted by Hoffmann (1998: 302). In a narrow sense, on the other hand,

paremptosis, as Quintilian (*Inst.* 9.2.23) reports. Interestingly, *parenthesis*/*paremptosis* is treated by Quintilian as a figure of thought, 'a semantic figure theoretically independent from any particular linguistic form' (Schneider 2007: 19–20, cf. Schwyzer 1939: 4–6). Even though parentheses are a syntactic phenomenon, they must have been perceived to affect primarily the presentation of the subject-matter and seem to be defined by their semantic, rather than syntactic, status. Dionysius of Halicarnassus (*Amm.* 2 15), for instance, describes the following passage of Thucydides (1.2.2) as hard to follow because of its numerous *paremptoseis*:

(17) *τῆς γὰρ ἐμπορίας οὐκ οὔσης, οὐδὲ ἐπιμιγνύντες ἀδεῶς ἀλλήλοις οὔτε κατὰ γῆν οὔτε διὰ θαλάσσης, νεμόμενοί τε τὰ αὑτῶν ἕκαστοι ὅσον ἀποζῆν καὶ περιουσίαν χρημάτων οὐκ ἔχοντες, οὔτε γῆν φυτεύοντες, ἄδηλον ὂν πότε τις ἐπελθὼν καὶ ἅμ᾽ ἀτειχίστων ὄντων ἄλλος ἀφαιρήσεται· τῆς τε ἀναγκαίου τροφῆς πανταχοῦ ἂν ὁμοίως ἐπικρατήσειν οἰόμενοι οὐ χαλεπῶς ἀνίσταντο.*

'For, since there was no commerce, and they did not mingle fearlessly with each other neither by sea nor by land, and they exploited each their own land only for subsistence and did not have any surplus of goods, and they did not plant the land, since it was uncertain when someone else would come and plunder them, since at the same time their land was unfortified; and since they thought that they could get hold of their bare necessities equally anywhere, they departed without difficulty.'

Dionysius suggests that the passage could be made clearer by interrupting the series of participial constructions after *νεμόμενοί τε τὰ αὑτῶν ἕκαστοι ὅσον ἀποζῆν* and jumping directly to the main verb and its modifier (*οὐ χαλεπῶς ἀνίσταντο*). Arguably, the participial clauses *οὐδὲ ἐπιμιγνύντες κτλ.*, *νεμόμενοί κτλ.*, *οὐκ ἔχοντες κτλ.*, *οὔτε φυτεύοντες κτλ.*, and *ἄδηλον ὂν κτλ.* may be regarded as parenthetical explanations of the initial genitive absolute *τῆς γὰρ ἐμπορίας οὐκ οὔσης*—at least from a semantic point of view (see Appendix A.1 on semantic and syntactic dependency).

Syntactically, the genitive absolute may be regarded as depending directly on the main verb, and the same applies to the participle

parentheses are defined as 'syntactically complete and autonomous sentence[s] interrupting the syntactic coherence of another sentence' (Schneider 2007: 7, 21–2).

ἐπιμιγνύντες, which introduces a series of coordinate participles including the coordinate group νεμόμενοί τε καὶ ἔχοντες and φυτεύοντες, to which ἄδηλον ὄν is subordinate, while the participle οἰόμενοι may be analysed as directly dependent on the main verb. Dionysius' solution does not eliminate the *paremptoseis* but drastically simplifies the picture. It is telling that Dionysius refers to the *paremptoseis* as *pragmata* thrown in the middle and that the result of his *metathesis* is that of clarifying the *dianoia* ('meaning') of the passage—we are clearly dealing with 'content-clarity' (cf. also Longin. 22.3–4 on Thucydidean hyperbata).[26]

On a related note, Aristotle (*Rh.* 1407b21–5) mentions the obscurity of sentences in which too many things intervene between the beginning and the conclusion, as in:

(18) ἔμελλον γὰρ διαλεχθεὶς ἐκείνῳ τάδε καὶ τάδε καὶ ὧδε πορεύεσθαι.

'For I was about, having talked with him, and this and this and thus, to go.'

Aristotle suggests moving the intervening material to the end of the sentence and ordering the clauses in a more linear fashion:

(18a) ἔμελλον γὰρ διαλεχθεὶς πορεύεσθαι, εἶτα τάδε καὶ τάδε καὶ ὧδε ἐγένετο.

'For I was about, having talked, to go, then this and this and thus happened.'

We do not know what the generic placeholders in the original sentence stood for; Aristotle's alternative version shows that they must stand for some *pragmata* of sorts—descriptions of events, and the like—and we have no indications as to their syntactic form, which may or may not be parenthetical in the modern sense of this term.

If *parentheseis* are retained, their negative impact may be mitigated by *epanalepsis*, the resumptive repetition of a *syndesmos* (a connective particle), as other rhetoricians suggest. 'Demetrius' (*Eloc.* 196) gives the following example, which includes a resumptive pronoun (ταῦτα):

[26] In the treatise *On the Sublime* (22) hyperbaton is regarded not as a (primarily) syntactic phenomenon, but as a subversion of natural order in the presentation of thoughts (and of the words that express them).

(19) *ὅσα μὲν ἔπραξε Φίλιππος, καὶ ὡς τὴν Θρᾴκην κατεστέψατο, καὶ Χερρόνησον εἷλεν, καὶ Βυζάντιον ἐπολιόρκησεν, καὶ Ἀμφίπολιν οὐκ ἀπέδωκεν, ταῦτα μὲν παραλείψω.*

'All that Philip did—how he subdued Thrace, and seized the Chersonese, and besieged Byzantium, and did not return Amphipolis—these things I shall pass over.'

This figure is also described as contributing to clarity by Hermogenes (*Id.* 1.4 239.14–240.9 Rabe), who gives a similar example:

(20) *τὸ μὲν οὖν, ὦ ἄνδρες Ἀθηναῖοι, τὴν Φιλίππου ῥώμην διεξιέναι καὶ διὰ τούτων τῶν λόγων προτρέπειν τὰ δέοντα ποιεῖν ὑμᾶς, οὐχὶ καλῶς ἔχειν ἡγοῦμαι . . . ταῦτα μὲν οὖν παραλείψω.*

'Now, Athenians, I do not consider it suitable that I should expound Philip's strength and that I should encourage you to do what is necessary by such words . . . So, I shall pass over these matters.' (D. 2.3–4)

In this passage this figure extends over a digression, and functions as a cohesion device at the level of discourse, thus contributing, once again, to 'content-clarity'. The same applies to the use of *epanodos* to mitigate the *asapheia* of hyperbaton mentioned by Tiberius (*Fig.* 45), who must refer to hyperbaton by parenthesis.

Apart from *epanalepsis*, the accurate and straightforward use of connectives (*syndesmoi*) in correlative constructions is a common concern throughout the Greek rhetorical tradition. The *Rhetoric to Alexander* (25.2 1435a39–b3), which draws on the teachings of the Isocratean school (cf. Chiron 2002: 68, n. 436 and Cope 1867: 437–8), recommends that *δέ* follows *μέν* and, likewise, correlative *καί* follows correlative *καί*. The same was observed by Aristotle (*Rh.* 1407a20–31), who considers this a matter of linguistic correctness (*hellenismos*). According to Aristotle, the interval between correlated *syndesmoi* must not be too long (cf. Phld. *Rh.* 1.160 Sudhaus, col. 18.23–5), which would result in *asapheia*, as in the following example:

(21) *ἐγὼ μέν, ἐπεί μοι εἶπεν (ἦλθε γὰρ Κλέων δεόμενός τε καὶ ἀξιῶν), ἐπορευόμην παραλαβὼν αὐτούς.*

'I, after he told me (for Cleon had come both asking and begging), went away taking them with me.'

The faults flagged up by Aristotle are the number of unexpected connectives (*ἐπεί, γάρ, τε, καί*) occurring between *μέν* and *δέ* and the

long distance separating initial *ἐγώ* from the main verb *ἐπορευόμην* (*ἐὰν δὲ πολὺ τὸ μεταξὺ γένηται τοῦ ἐπορευόμην, ἀσαφές*).

The importance of the correct use of connectives is also underlined by 'Demetrius' (*Eloc.* 192), who comments on the intrinsic difficulty of asyndetic and disconnected constructions (*to asyndeton kai dialelymenon*; 'Demetrius' assigns such constructions to the grand and forceful styles, cf. *Eloc.* 64 and 269). The lack of connectives (*lysis*) is presented as the reason why the prose of Heraclitus is obscure (*skoteina*). This passage partially repeats the points made by Aristotle in the *Rhetoric* (1407b11–16). As we have seen, Aristotle points out that Heraclitus is difficult to punctuate, which means that his text contains several cases in which the syntactic attachment of constituents is ambiguous. Aristotle presents this as a feature that presents difficulty in reading alongside the excessive use of *syndesmoi* (*δεῖ εὐανάγνωστον εἶναι τὸ γεγραμμένον* [...] *ὅπερ οἱ πολλοὶ σύνδεσμοι οὐκ ἔχουσιν, οὐδ' ἃ μὴ ῥᾴδιον διαστίξαι*)—these two features are not contrasted with one another, and the ambiguity in the quotation of Heraclitus is a problem of word order which would not obviously be solved by the use of connectives. 'Demetrius' (*Eloc.* 193–4, cf. 226) goes on to argue that the disjointed style (*dialelymene lexis*) is suited to debates (*enagonios*, cf. n. 23) and for acting—he points out that *lysis* is a cue for *hypokrisis* (*κινεῖ γὰρ ὑπόκρισιν ἡ λύσις*). Conversely, the written style is easy to read (*γραφικὴ δὲ λέξις ἡ εὐανάγνωστος*, cf. 1.3 on Aristotle), and *lysis*, a form of mimesis (of conversation), is simply not at home there (*Eloc.* 226). According to 'Demetrius', one cannot help acting out a sequence like *ἐδεξάμην, ἔτικτον, ἐκτρέφω, φίλε* ('I conceived, I generated, I bring up, dear', Men. fr. 685 Koerte) because of *lysis*. Such an impulse to recite is cancelled by the addition of *syndesmoi* (as in *ἐδεξάμην καὶ ἔτικτον καὶ ἐκτρέφω*), which removes all emotion. As we have seen (1.3), the same had been observed by Aristotle. In the *Rhetoric* (*Rh.* 1413b21–2), asyndeton is assigned to the debating style but barred from the written one precisely because it calls for recitation, with appropriate variation of character and pitch—that is, pitch variation determined by sentence intonation on top of lexical pitches (*ἀνάγκη γὰρ ὑποκρίνεσθαι καὶ μὴ ὡς ἓν λέγοντα τῷ αὐτῷ ἤθει καὶ τόνῳ εἰπεῖν*, *Rh.* 1413b30–1; see Vatri 2016). Asyndeton, as a rhetorical figure, seems to play a role at two stages in the communication process from the author of a text (the sender, cf. 2.1) to the receivers. The first stage corresponds to the transmission of the message from the author to the reader/speaker (who may coincide

with the author)—if the text is transmitted through writing, this stage corresponds to *anagnosis*. Here, asyndeton triggers *hypokrisis*. The second stage corresponds to the transmission of the message from the author to the audience (via the speaker), and this is where the other rhetorical effects of asyndeton (on which see Vatri 2015b) come into play. The difficulty of asyndeton is restricted to the first stage only, and further circumscribed by the condition that the text should be accessed in writing.

Interestingly, Dionysius of Halicarnassus (*Lys.* 8.3) presents the disconnected, unperiodic style (*dialelymene lexis*) as a feature of the style of Lysias, the quintessential representative of the plain style and, analogously, Hermogenes (*Id.* 1.3 232.5–7 Rabe) considers the periodic style alien to purity (*katharotes*), the component of *sapheneia* which characterizes all textual material that is intrinsically clear (*Id.* 1.4 235.4–5 Rabe; see Hagedorn 1964: 24–7). 'Demetrius' (*Eloc.* 202), in turn, opines that rounded sentences (*periagogai*) may be obscure if too long, and that only short ones—which appear relatively disconnected compared to long ones (*Eloc.* 45–6)—should be used in the plain style.[27] On the optimal length of periods, Aristotle observes that they must be 'easily encompassed at a glance' (*εὐσύνοπτον*, *Rh.* 1409a36–b1). It has been argued that this adjective could be interpreted as a metaphor alluding to 'cognitive discernment' rather than actual ocular vision (Graff 2001: 30 and 40, n. 26, cf. Fowler 1982: 93, Adamik 1984: 186). This interpretation is quite plausible; it is not obvious how a period could be 'seen in its entirety' in scarcely punctuated texts, where a *paragraphos* signalled only that a sentence (not necessarily coinciding with a period) ended somewhere in the line under whose first letters it appeared. Moreover, earlier on in the *Rhetoric* (1409a19–21), Aristotle recommends that final fourth paeans (⏑⏑⏑–) are to be preferred to *paragraphi* or other scribal devices as sentence-end markers (*δεῖ τῇ μακρᾷ ἀποκόπτεσθαι, καὶ δήλην εἶναι τὴν τελευτὴν μὴ διὰ τὸν γραφέα, μηδὲ διὰ τὴν παραγραφήν, ἀλλὰ διὰ τὸν ῥυθμόν*). It is questionable that 'Aristotle rejects written punctuation as gratuitous', as Graff (2001: 28) puts it. The passage could rather be read as stating that the end of a sentence must be

[27] *Periagoge* ('rounding', the impression that thought reaches completion at the end of the sentence and points back to its beginning, cf. Innes 1994: 45–7 with n. 36) is a feature of the periodic style; cf. Demetr. *Eloc.* 19. On the obscurity of long periods cf. also Anon.Seg. 85 and Longin. *Rh.* fr. 48.221–3 Patillon–Brisson.

recognizable simply by its rhythm, and that punctuation marks and all other visual devices are insufficient (but not redundant) for this purpose, as they would be available only to readers (cf. Adamik 1984: 187). By contrast, metrical *clausulae* are an aural device, sought for the benefit of the hearers in the first place. A non-metaphorical interpretation of *εὐσύνοπτον* would hardly be consistent with Aristotle's recommendation that aural, rather than visual, sentence-boundary markers should be employed.

Brevity (*syntomia*) does not always contribute to *sapheneia* (cf. Demetr. *Eloc.* 197). As a matter of fact, *syntomia* was already by the *Rhetoric to Alexander* (30.4 1438a17–23) identified as an independent virtue of narrative (*diegesis*) alongside *sapheneia* and persuasiveness (cf. Theo *Prog.* 79.20 Patillon). The Stoics (D.L. 7.59) added it as the fifth *arete logou* to the Theophrastean list of four (the other virtues being *hellenismos, sapheneia*, *prepon* 'propriety', and *kataskeue* 'ornament'), and Dionysius of Halicarnassus includes it among the necessary *aretai* (D.H. *Th.* 23). *Syntomia* ranks at the same level as *sapheneia* in such classifications, but these two qualities affect one another and their relationship is rather complex.[28] Just as is the case with *sapheneia*, ancient theoreticians distinguish between brevity of form (*lexis, onomata*) and brevity of subject-matter (*gnome, pragmata*). These two levels are presented jointly in the *Rhetoric to Alexander* (30.9 1438a38–40) but as disjunct by Theon (*Prog.* 83.15–16 Patillon) and pseudo-Aristides (*Rh.* 1.136). Brevity of form may concern the size of clauses and sentences (as in 'Demetrius'), or, perhaps more trivially, the length of the very words (Theo *Prog.* 84.14–17 Patillon). A more common interpretation of brevity has to do with the number of words employed to express a concept—the economy of the language (see 4.3.3). In other words, brevity is about the relationship between *onomata* and *pragmata*: the quantity of *onomata* must be appropriate to the quantity and conceptual 'size' of the *pragmata*. From this point of view, *syntomia* may be potentially disruptive of clarity, if an excess of information is packaged into an insufficient number of words—a fault which Dionysius of Halicarnassus forcefully underlines in his criticism of Thucydides' style (*Th.* 24 and 52). On this point, the *Rhetoric to Alexander* (30.9 1438a39–40) recommends

[28] Just like other textual features that have an impact on *sapheneia*, brevity is commonly recognized as a mnemonic device in the Greek tradition; see Vatri 2015a: 756–9.

that one should omit as many words and concepts as possible, retaining only those which are necessary for the text to remain comprehensible. The temptation to favour *syntomia* over *sapheneia* is also mentioned in Theon's *Progymnasmata* (84.17–18 Patillon), which make the point that *sapheneia* and *syntomia* are qualities that should coexist, but may be used without restraint only when the nature of the subject-matter counterbalances the possible detrimental effects of either quality (Theo *Prog.* 79.23–4, 25–8 Patillon). If the subject-matter is intrinsically simple, one may be very concise (*sapheneia* will still be generated in the receivers' minds); if it is difficult, one may be very clear (evidently, in terms of 'content-clarity') at the expense of *syntomia*. As Aristotle had already concluded (*Rh.* 1414a25–6), the ultimate goal is the right balance between the *asapheia* deriving from excessive brevity and *adoleschia* ('verbiage'). The latter fault obfuscates the connection between what is said and what is meant when circumlocutions are used to designate simple concepts (circumlocutions may be easy to process as syntactic phrases, but hard to understand), for which *kyria onomata* would have been more effective (Arist. *Rh.* 1406a32–5, D.H. *Dem.* 5; cf. Theo *Prog.* 84.10–12 on circumlocutions as affecting *syntomia*, without reference to *sapheneia*). Overall, the balance between unclear *syntomia* and unclear *adoleschia* is hard to achieve, as Dionysius of Halicarnassus remarks (*Lys.* 4); he suggests, as a golden rule, that the subject-matter (*pragmata*) should not be slave to words (*onomata*), but *onomata* should follow *pragmata* (*οὐ τοῖς ὀνόμασι δουλεύει τὰ πράγματα* [. . .], *τοῖς δὲ πράγμασιν ἀκολουθεῖ τὰ ὀνόματα*, cf. D.H. *Isoc.* 12). Dionysius (*Lys.* 5) stresses the fact that Lysias strikes a perfect balance both in 'form-' and in 'content-brevity': he carefully selects his materials and excludes inessential information, perfectly controlling the timing and overall duration of his speeches.

Disruption of clarity may also be caused by *plagiotes* (or *plagia lexis*), which 'Demetrius' (*Eloc.* 198) illustrates by quoting a sentence of Xenophon:

(22) *καὶ ὅτι τριήρεις ἤκουεν περιπλεούσας ἀπ' Ἰωνίας εἰς Κιλικίαν Τάμον ἔχοντα τὰς Λακεδαιμονίων καὶ αὐτοῦ Κύρου.*

'And that he heard that Tamos was commanding triremes which were sailing around from Ionia to Cilicia, those which belonged to the Lacedaemonians and to Cyrus himself.' (X. *Anab.* 1.2.21)

'Demetrius' shows how the sentence could become clearer by rewriting it *ex eutheias*—an instance of the method of *metathesis*, which had been used both for didactic purposes and in literary criticism since the early fourth century BC (see de Jonge 2008: 367–90):

(22a) *τριήρεις προσεδοκῶντο εἰς Κιλικίαν πολλαὶ μὲν Λάκαιναι, πολλαὶ δὲ Περσίδες, Κύρῳ ναυπηγηθεῖσαι ἐπ' αὐτῷ τούτῳ. ἔπλεον δ' ἀπ' Ἰωνίας· ναύαρχος δ' αὐταῖς ἐπεστάτει Τάμος Αἰγύπτιος.*

'Triremes were expected in Cilicia, many Laconian and many Persian, built for Cyrus for this very purpose. They sailed from Ionia; in charge of them as a commander there was Tamos the Aegyptian.'

The terminology adopted by 'Demetrius' in this passage is confusing. As a grammatical term, the adjective *plagios* may indicate both oblique cases (as in D.H. *Comp*. 6.6, cf. de Jonge 2008: 158) or dependent constructions (Dickey 2007: 254; cf. Innes' Loeb translation of 'Demetrius'). *Eutheia*, instead, normally indicates the nominative case (Dickey 2007: 239)—however, as we have seen, 'Demetrius' uses the term *orthe* for this (*Eloc.* 201). Now, 'Demetrius' restructures the sentence so that the accusatives *τριήρεις* and *Τάμον* are turned into nominatives. This would indicate that he might just be recommending that one should avoid overusing oblique cases, as Roberts (1902: 299) and Kustas (1973: 69) suggest. As shown above, this falls in line with the teachings of other rhetoricians, but would contradict what 'Demetrius' himself says at *Eloc.* 201, where he mentions that the accusative is perfectly acceptable at the beginning of narrative passages (cf. Chiron 1993: 122–3). *To plagion* contrasts with *to euthes* in another section of the treatise as well (*Eloc.* 104). The former type of construction is exemplified by the sentence *ἡ δὲ γνώμη ἦν, ὡς εἰς τὰς τάξεις τῶν Ἑλλήνων ἐλώντων καὶ διακοψόντων* ('the intention was to drive through the ranks of the Greeks and break them off', X. *An.* 1.8.10), which 'Demetrius' paraphrases as *διενοοῦντο ἐλάσαι καὶ διακόψαι* ('they intended to drive through and cut off'). It is true that an oblique case such as the genitive (absolute) is removed, but no nominative is substituted (at most, it is implied that the logical subject of the genitive absolute becomes the implied subject of the indicative). This passage of 'Demetrius' is reminiscent of the treatment of *orthotes* (direct construction) in Hermogenes (*Id.* 1.3 229.19–230.25 Rabe). The latter construction is opposed to *plagiasmos*, which is said to be complicated

in that it brings along other thoughts (*ἔννοιαι*). Examples of *orthotes* include: *ἐγὼ γάρ, ὦ Ἀθηναῖοι, προσέκρουσα ἀνθρώπῳ πονηρῷ καὶ φιλαπεχθήμονι* ('for I, Athenians, was at odds with a wicked and quarrelsome man', D. 24.6), *Σαννίων ἔστι* ('Sannion is', D. 21.58), *ἀδελφὰς ἔχομεν γυναῖκας* ('we married sisters', D. 41.1), *ἦν Κανδαύλης* ('Candaules was', Hdt. 1.7), and *Κροῖσος ἦν Λυδὸς μὲν γένος, παῖς δὲ Ἀλυάττεω, τύραννος δὲ ἐθνέων τῶν ἐντὸς Ἅλυος ποταμοῦ* ('Croesus was Lydian by birth, son of Alyattes, ruler of the peoples on this side of the river Halys', Hdt. 1.6). Hermogenes turns the latter sentence into the indirect construction to illustrate his point: *Κροίσου ὄντος Λυδοῦ μὲν γένος, παιδὸς δὲ Ἀλυάττεω, τυράννου δὲ ἐθνῶν τῶν ἐντὸς Ἅλυος ποταμοῦ . . .* ('with Croesus being Lydian by birth, and the son of Alyattes, and the ruler of the peoples on this side of the river Halys . . . '). This and other examples of *plagiasmos* consist in genitive absolutes preceding the main clause (*Id.* 1.11 288.13–25 and 2.1 317.15–20 Rabe), whose effect is that of leaving the meaning hanging (*ὁρᾷς, πῶς ἔτι κρέμαται ἡ διάνοια*; *Id.* 1.3 230.19–20). Patillon (1997: 335, n. 3) thinks that Hermogenes used *plagiasmos* as a very specialized term restricted precisely to this type of participial constructions in sentence-initial position. Wooten (1987: 159) normally interprets this term as meaning 'the use of subordinate clauses'; in his translation of the passage discussed here, however, he renders *orthotes* as 'straightforward construction with the noun in the nominative case' and *plagiasmoi* as 'oblique cases'. On the grounds of what we read in 'Demetrius' and Hermogenes, a morphological term like *plagios* may well designate a syntactic phenomenon regularly characterized by the presence of a precise morphological feature (the genitive), and *plagiasmos* in these two treatises may well be interpreted in the restricted sense described by Patillon (moreover, as we have seen, constructions in the oblique cases are called *enkeklimena* in other rhetorical treatises). However, the meaning of this term might have expanded to include participial constructions in general (cf. Ascani 2002: 119, n. 88): the passage of Xenophon criticized by 'Demetrius' (*Eloc.* 198) contains no genitive absolutes, but in its paraphrase *ex eutheias* the participles *περιπλεούσας* and *ἔχοντα* are eliminated and replaced by clauses with the verb in the indicative (as we have seen, Dionysius of Halicarnassus uses the terms *orthos* and *enkeklimenos* to oppose the indicative to the other moods).[29] Another example of this

[29] In the *Sophistical Refutations* (4 166a23–31) Aristotle ascribes ambiguity to participles by virtue of their possible interpretation as circumstantial (in which case

use of *plagiasmos* is found in pseudo-Aristides (1.55, cf. Patillon 2002: 121, n. 131), who uses this term to describe the participial clause *οὐχὶ τῶν ἐνοχλούντων ὑμᾶς οὐδὲ τῶν πολιτευομένων παρ᾽ ὑμῖν ὤν* ('not being one of those who trouble you or one of those who take part in government in your state', D. 23.4).

The ancient discussions and exemplifications of 'form-clarity' ('processability', which, as we have seen, is not always sharply distinguishable from 'content-clarity', 'understandability', in the ancient sources) are valuable evidence for the reconstruction of native comprehension of Classical Greek. This idea is especially reinforced by the assumption that, at least in principle, the points made in the ancient treatises aimed to convince native (or at least highly proficient) speakers first of all from an empirical point of view. In other words, what was described as be clear or obscure was supposed to be perceived as clear or obscure in order for the rhetorical precepts and guidelines to be believable. This is especially true of examples and demonstrations of clarity or obscurity unaccompanied by precise descriptions of the linguistic features that convey either effect, as is often the case with illustrations based on the critical method of *metathesis*. Such practical examples of clear or obscure language may be construed as 'experimental material' that was supposed to have the same effect on the reader as that described by the author, especially when the presented texts were expressly designed for this purpose and not merely extracted from literary works. In this light, such materials may be analysed in an appropriate framework for the purpose of extracting principles of native comprehension of Classical Greek, which may in turn be applied to further classical texts in order to approximate the native perception of the linguistic material they consist of. Such principles do not necessarily correspond to the precepts and remarks presented in the ancient treatises; these, in turn, may occasionally rely only on the native ear rather than introducing some abstract principle. When Aristotle, for instance, observes that short *cola* 'make the hearer stumble' (*Rh.* 1409b17–18), we can assume that he describes the effect of this linguistic feature as he

they would modify the state of affairs described by the main verb, as in *δύνασθαι καθήμενον βαδίζειν* 'to be possible to walk while sitting') or substantivized (in which case they may indicate a permanent or temporary state of an entity, 'to be possible for a sitting man to walk'). Such ambiguities are presented as a matter of *diairesis* (division), and Aristotle would imply that should be resolved by prosodic means (see Schreiber 2003: 60–4).

perceived it himself. As we have seen, the relationship between *syntomia* and *sapheneia* is about striking the optimal balance. Arguably, in most cases it must have been straightforward enough for an ancient rhetorician to perceive where the threshold was between being concise and being too concise (cf. Dover 1997: 40), but we modern non-native speakers are in a worse position, whatever our proficiency in Classical Greek may be. Moreover, as we have seen, it is not always clear whether brevity is presented as affecting 'understandability' or 'processability' (or both, for that matter), even though the treatises seem to be primarily concerned with its effect on 'content-clarity'. Another potential problem with the ancient precepts, when they are not illustrated by examples, is connected to the fact that the study of language in antiquity was not always pursued for its own sake—the Stoics, for instance, regarded it as a division of systematic philosophy (cf. Sluiter 1990: 16)—and this could well reflect on the discussions that were based on such theories and drew on the same materials. Moreover, we may legitimately suspect that in rhetorical handbooks, which were aimed at the practical instruction of public speakers, interpretations of empirical linguistic facts were framed in such a way as to fit a theory or specific didactic purposes (I will term this the 'prescriptive bias'). This bias may be controlled for, as de Jonge (2007: 219) illustrates when he compares the practice of an ancient 'linguist' ('Demetrius') with that of a modern one (Helma Dik):

> Demetrius is primarily prescriptive, whereas Dik is descriptive. In general, Demetrius intends to instruct the future writer by analysing classical examples. He does not give a description of the standard word order of Greek, but explains how one *should* arrange the words in order to write effective texts. Second, the subject of Demetrius' treatise is 'style' or 'expression' (*ἑρμηνεία*), that is, he deals with conscious and artistic arrangement, which may also include aspects of rhythm and euphony. Dik, on the other hand, selects Herodotus as a corpus precisely in order to exclude euphony and rhythm as possible factors. Although both of these differences should be taken into account, I do think that we are allowed to connect Demetrius' views on natural word order with the modern pragmatic results, for the following reason. In ancient theory, it is precisely the plain style that is presented as an imitation of everyday language. In Demetrius' account of word order, the 'natural' corresponds to the 'normal' and the 'unmodified'. Thus, in the treatment of the plain style, the 'prescriptive' largely coincides with the 'descriptive'.

If discussions of the plain style may be regarded as relatively reliable from this point of view, other questions must be taken into account if we are to extrapolate principles from the ancient rhetorical materials in a sound and meaningful way. For one thing, the chronological span between the earliest and the latest treatises cited here reaches almost seven centuries, from the fourth century BC (Aristotle and the *Rhetoric to Alexander*) to the late third century AD (Menander), with clusters around the first centuries BC/AD (from Dionysius to the *Progymnasmata*) and the late second/early third century AD (with the Hermogenic corpus; see Heath 2004: 3–89). It is true that on the one hand, later treatises reuse and preserve older material and, on the other, Greek in the Roman Empire was in a state of diglossia, in that the educated classes would regularly (try to) use Classical Attic (cf. Horrocks 2010: 135), but awareness of the lapse of time occasionally surfaces in the treatises. Dionysius of Halicarnassus, for instance, calls some unusual words 'antiquated' (*ἀπηρχαιωμένα*, *Amm.* 2 3), and reports (*Th.* 51) that some ascribed Thucydides' difficulty to its antiquity, claiming that his contemporaries would have found his language familiar—an opinion with which Dionysius disagrees.

For another thing, the ancient rhetorical sources are not consistent in taking into account the role of the situational and semantic context—whether constructed in discourse (as co-text; so Arist. *Po.* 1461a32–3) or corresponding to the beliefs and presuppositions of the participants in the linguistic exchange—in the interpretation of the linguistic material of their examples, which is normally presented in the form of isolated sentences or phrases (cf. Atherton 1993: 338). As we have seen, the situational context does come into play with remarks that mention or imply the use of paralinguistic elements (voice and gesture). The consideration given to paralinguistic communication, in turn, reveals what textual practices each rhetorical work envisages.

Aristotle, to begin with, gives considerable attention to the oral dimension even when he works with written texts; as he mentions in the *Rhetoric* (1407b11–14), what is easy to read must also be easy to say, which may be complicated by the absence of punctuation. Many of the ambiguities that Aristotle discusses in the *Rhetoric*, the *Poetics*, and the *Sophistical Refutations* are perceivable only in transcriptions adopting an orthographic system which fails to capture important phonetic features of the spoken language such as lexical accents and prosodic breaks (see Atherton 1993: 224–8). Aristotle identifies

ambiguities due to the homonymy of words that are distinguished only by the accent, sometimes in combination with the presence or absence of initial aspiration (which would later come to be indicated by breathing marks). His examples include sentences like δίδομεν δέ οἱ εὖχος ἀρέσθαι ('we grant him what he desires', *Il.* 21.297), with the proparoxytone verb in the indicative, as opposed to the paroxytone (jussive) infinitive διδόμεν ('grant him what he prays for'), and τὸ μὲν οὗ καταπύθεται ὄμβρῳ ('part of it rots in the rain', *Il.* 23.328) as opposed to οὐ ('it does not rot in the rain'; see Lucas 1972: 243 and Probert 2006: 16–18 and nn. 4–5 for fuller discussions). These examples are given both in the *Poetics* (1461a21–3) and in the *Sophistical Refutations* (4 166b1–9, with the addition of another example at 21 177b35–178a3). The latter treatise (4 166b1–9) clearly underlines that ambiguities concerning the accent may exist only in writing or in poetry—written (cf. Probert 2006: 18) or perhaps sung (cf. D.H. *Comp*. 11.19), even though, as far as we can tell, music tended to respect the pitch movements of speech (see Allen 1973: 232). The spoken word is safe from fallacies of this kind (21 177b35–178b3). A string of characters like ορος may be ambiguous only in writing, whereas its meanings are distinguished by *prosoidia* in speech (20 177b3–5)—the word may be pronounced as ὄρος ('mountain') or ὀρός ('whey').[30] On the other hand, in the *Rhetoric* (1412b11–16) Aristotle himself regards the name Ἀνάσχετος and the adjective ἀνασχετός as homonyms, and in the *Sophistical Refutations* (7 169a27–9) he concedes that distinction of accentuation is perceived to be negligible, which makes the ambiguities possible in the first place. In Probert's (2006: 18, n. 6) words, 'when listening to speech, it could happen that one failed to take proper notice of the accentuation', and both mispronunciations and misunderstandings were, of course, a possibility.

According to the *Sophistical Refutations* (20 177b1–9), most of the syntactic ambiguities deriving from different ways of grouping constituents (*synthesis* and *diairesis*) may also be resolved orally (cf. n. 29). Therefore, a sentence like ἰδεῖν τοῖς ὀφθαλμοῖς τυπτόμενον (20 177b10–12) may be interpreted as meaning 'to see with one's eyes someone being beaten' or 'to see someone beaten by means of one's eyes', whether one attaches τοῖς ὀφθαλμοῖς to ἰδεῖν or to τυπτόμενον.

[30] It is unlikely that Aristotle is alluding to the opposition between ὄρος and ὅρος ('term'), since *prosoidia* in the fourth century specifically indicates the pitch at which syllables were pronounced and not the aspiration (cf. Laum 1928: 21–2).

Either attachment must be reflected by the prosody adopted when pronouncing the sentence. Other examples include a sentence like *ἔστιν ἀγαθὸν ὄντα σκυτέα μοχθηρὸν εἶναι* ('it is possible for someone good to be a bad cobbler', 20 177b14–17), which, if different prosodic divisions are made, may be read as 'it is possible that a good man, being a cobbler, is bad' (cf. Schreiber 2003: 66). The same applies to *μανθάνει νῦν γράμματα εἴπερ ἐμάνθανεν ἃ ἐπίσταται* ('he learns the alphabet if he learned what he knows', 4 166a31–2), which may be phrased as *μανθάνει νῦν, γράμματα εἴπερ ἐμάνθανεν, ἃ ἐπίσταται* ('he learns, if he learnt the alphabet, what he knows', cf. Schreiber 2003: 69–71). Likewise, in *ἓν μόνον δυνάμενον φέρειν πολλὰ δύνασθαι φέρειν* ('to be able to carry many things, being able to carry one thing alone', 4 166a32–3) the word *μόνον* may be joined with *ἕν* ('only one thing') or with *δυνάμενον* ('to carry on one's own', cf. Schreiber 2003: 67). In *πέντ' ἐστὶ δύο καὶ τρία* ('five is two plus three', 4 166a33–4), *καί* may be interpreted as a conjunction and not as a mathematical function, which results in interpretation of the sentence as a paradox ('five is two and [is] three', cf. Schreiber 2003: 66). Another example of the same sort is *πεντήκοντ' ἀνδρῶν ἑκατὸν λίπε δῖος Ἀχιλλεύς* ('divine Achilles left fifty of a hundred/a hundred of fifty men', 4 166a38–9, cf. Quint. *Inst*. 7.9.8 for a Latin version), where *ἀνδρῶν* may be separated from *πεντήκοντα* and joined with *ἑκατόν*, or vice versa, meaning that either Achilles slew half of his enemies or that he left twice as many enemies as they were before, which Schreiber (2003: 65) simply regards as absurd, but Russell (2002: 284, n. 10) imaginatively explains as meaning that 'he chopped each of the 50 in two'.

As we have seen, aspects of oral delivery are taken into account in other discussions of *lexis* as well. I have argued, for instance, that the function of *arthra* in contributing to *sapheneia* is related to the paralinguistic complementation of the text with physical deixis in *hypokrisis*, and that both ambiguous *arthra* and asyndeton may be interpreted as 'stage directions' of sorts. The Isocratean notion that hiatus must be avoided also betrays attention to the oral dimension.[31] Pseudo-Aristides (*Rh*. 1.135) and Hermogenes (*Id*. 1.3 229.10 Rabe) also reveal a phonetic approach as they refer to the 'sweetness' or 'harshness' of words. On the other hand, the *Rhetoric to Alexander*

[31] See for instance *Rh.Al*. 25.1 1435a33–4 and 25.5 1435b16–18, Demetr. *Eloc*. 207 on the avoidance of hiatus in the plain style, and Longin. *Rh*. fr. 48.225–31 Patillon–Brisson; cf. Chiron 2002: 166, n. 433 and Cope 1867: 437.

(25.6 1435b18–24) treats ὀδός and ὁδός as homonyms. It is unlikely that this should be read as an early indication of psilosis in Attic (see Allen 1987: 52, cf. Chiron 2002: 168, n. 445); rather, this remark would confirm the fact that *anagnosis* was also contemplated by the rhetorician *ad Alexandrum*, as I have argued with respect to the potentially disadvantageous use of *arthra*.

By contrast, Theon's *Progymnasmata* seem to revolve around written textual practices. In the discussion of the correction of exercises (72.4–15 Patillon), Theon explicitly talks about written assignments to be compared with the written compositions of the ancients. Likewise, his discussion of obscurity in law refers precisely to the written texts of laws (129.21 Patillon). In this context, Theon (129.19–25 Patillon) remarks that the string of characters δημοσια may be interpreted as either δημοσίᾱ (nominative feminine singular) or δημόσιᾰ (nominative neuter plural), with the difference being determined by the reading of the final -α as short or long (interestingly, no mention is made of the accent). The written dimension is also betrayed by the fact that, as we have seen, most cases of ambiguity presented by Theon as sources of obscurity had already been identified by Aristotle as resolved when pronounced orally, which Theon does not acknowledge. Theon adds cases of strings of characters that may be segmented in different ways. One such case is the string αυλητρις πεσοῦσα, which, in the absence of diacritics (Atherton 1993: 228), may be interpreted as either αὐλὴ τρὶς πεσοῦσα ('a house three times fallen') or αὐλητρὶς πεσοῦσα ('a fallen flute-player', 81.31–82.3 Patillon). This sequence (which is, once again, part of the text of a law), is a stock example of ambiguity in the Stoic tradition (D.L. 7.62, cf. Atherton 1993: 220–3; the same example is made in Quint. *Inst*. 7.9.4) and virtually the only one for which the Stoics provide some context (the verb πέπτωκε in Diogenes Laertius, πεσοῦσα in Theon). The context is not disambiguating (cf. Atherton 1993: 249 and 312), but its presence is relevant to the hypothetical reconstruction of the pronunciations of the string in its different segmentations. If the grave accent marks a smaller rise in pitch than the acute relative to that of unaccented syllables (cf. Devine and Stephens 1994: 181–3), one may infer that the pronunciation of <η> (/ε:/)[32] in αὐλὴ τρὶς would have been different from that of the

[32] It is likely that by Theon's time (first century AD) this phoneme had closed to a raised /e̞/with a loss of distinctive vowel length in the standard educated pronunciation (cf. Horrocks 2010: 166–8, Allen 1987: 74–5).

same (but unaccented) vowel in *αὐλητρὶς*. Arguably, this would have been pronounced at a higher pitch than the initial diphthong, because of the gradual rise in pitch that would 'build up' to the relatively high lexical tone on the final syllable. Had the word been taken out of context, we can conjecture that the pitch rise which would 'build up' to the final acute would have been steeper (cf. Devine and Stephens 1994: 189), and the /ε:/ in the central syllable of *αὐλητρίς* would have been pronounced at a higher pitch than in *αὐλητρὶς*. This rise would conceivably have neutralized the contrast between this vowel and the word-final /ε:/ of *αὐλὴ* with its reduced pitch rise (cf. Atherton 1993: 229–30). A similar example is given by Hermogenes (*Stat.* 41.20 Rabe) as he discusses ambiguity in the text of a will, where a string like [*ἐχέτω τὰ ἐμὰ*] *πανταλεων* could be segmented as *πάντα Λέων* ('Leon shall be my universal heir') or *Πανταλέων* ('Pantaleon shall have my belongings'; cf. already Quint. *Inst.* 7.9.6 with the name in the dative). Here the contrast between the vocalizations of the two versions would be sharper—it would involve the opposition between a vowel bearing a high tone (<*α*> with the acute in *πάντα*) and an unaccented vowel (<*α*> in *Πανταλέων*)—and is a stronger indication of a 'written bias'. The other example given by Theon is the string *ουκενταυροις ὁ Ἡρακλῆς μάχεται*, in which the euphonic ('movable') *κ* (referred to by Theon as a 'non-significant part', cf. Atherton 1993: 369)[33] may be attached either to *ου*, resulting in the segmentation *οὐκ ἐν ταύροις* ('[Heracles fights] not among bulls'), or to what follows, which results in *οὐ κενταύροις* ('[Heracles fights] not with the centaurs'). In this case, the two readings would not differ in pronunciation either, at least, arguably, in spontaneous speech—one could still insert a prosodic break after *οὐ* or *οὐκ* in order to mark word division as appropriate. Overall, the 'written bias' may have been there in Theon's Stoic sources (cf. Atherton 1993: 230), but such a 'bias' surfaces in the *Progymnasmata* only because of the textual practices that the exercises involved, which, in turn, would have allowed making used of other independently 'biased' material. Written access to the texts is also envisaged pseudo-Hermogenes' *On Method* (35 452.20–1 Rabe) in the passage which deals with alleged ambiguities 'in the books of the ancients' (*ἐν τοῖς βίβλοις γίνεσθαι ὑπὸ τῶν παλαιῶν*). Interestingly, one

[33] Patillon supplies the word *ἄσημον* ('non-significant') from the Armenian translation of the *Progymnasmata*. If accepted, this reading undermines Atherton's (1993: 370) reasoning on the semantic underspecification of *μόριόν τι*.

of the ambiguities discussed in this passage, as we have seen, depends on the attachment of a prepositional phrase to either the preceding or the following verb (*στασιάσαντες* [. . .] *ἀπὸ πολέμου τινὸς τῶν προσοίκων βαρβάρων ἐφθάρησαν*, example 4). We have also seen that this type of ambiguity could well be resolved orally, but pseudo-Hermogenes ignores this and mentions only the semantic context (and perhaps a question of grammaticality) as the reason why this sentence should not be considered truly ambiguous.

4.3 THE PSYCHOLINGUISTICS OF *SAPHENEIA*

These questions are crucial to the correct linguistic interpretation of the materials presented by the ancient critics and rhetoricians, and they must be borne in mind when attempting to extrapolate general principles from the ancient discussions of 'form-clarity'. Since this rhetorical/linguistic quality consists in the preservation of the optimal processability of the text, a promising toolbox for the 'reverse engineering' of the linguistic 'experiments' presented in the ancient rhetorical literature is to be sought in the findings and methods of the modern scientific study of language comprehension. Drawing a parallel from medicine, the ancient discussions of clarity provide us with a valuable symptomatology of the effects of linguistic structures on the native speakers' comprehension. If we were dealing with ancient descriptions of the symptoms of some medical condition, modern medical science would in many cases allow us to identify the disease beyond the limitations of ancient diagnostic methods, whose results need not be correct from a modern point of view. Likewise, we can study such linguistic 'symptoms' in the light of research on language comprehension. A necessary assumption in order for the toolbox of modern psycholinguistics to be applied to a dead language is that the 'human parser' (the system of perceptual and cognitive mechanisms involved in the comprehension of linguistic input—in other words, the way in which humans are 'wired' to process language) be the same for contemporary speakers of any language as it is for ancient speakers of dead languages.[34] This does not mean that the comprehension processes are

[34] On this point, one might object that in a semi-literate culture, such as that of classical Greece, long-term memory was much better trained than in contemporary,

assumed to be the same for all languages, ancient and modern: as a matter of fact, theories that account well for the comprehension of English, for instance, are often challenged when other languages are taken into account (see for instance Konieczny 2000). Comprehension models apply cross-linguistically to languages that share some important typological features; these include, for instance, (syntactically) free as opposed to fixed word order, rich/poor morphology, the possibility/impossibility of constructions in which the modifier precedes the constituent it modifies (e.g. adjective before noun/noun before adjective), and so on. Theories that predict comprehension difficulties in relatively fixed-word-order and low morphological marking languages like English (where the subject normally precedes the verb and the verb precedes the direct object) fail to predict them as successfully in languages where word order is freer and morphology is relatively rich (e.g. German, where the verb may occur at the

fully literate cultures, which would lead to some difference in cognitive skills. Now, language comprehension seems to require the retrieval of long-term memory content, namely semantic categories (see Was and Woltz 2007, cf. Traxler et al. 2005, Alloway and Gathercole 2005: 272, 279). We might wonder whether the Greeks were more skilled at retrieving semantic information from their long-term memories owing to their allegedly superior mnemonic skills. First of all, we should ascertain whether their memories were actually better than those of modern Western literates. It is certainly true that the 'aural' Greek society of the fifth century BC relied on memory to a much greater extent than modern Western societies do. What must not be taken for granted, however, is that the practice of memorization in oral societies makes people develop particular cognitive skills that literates lack: in Thomas' (1989: 4) words, 'people in oral societies [. . .] have better devices or mechanisms for remembering, which is an entirely different thing' (cf. Small 1995, Small 1997: 4–5, and see Rubin 1995 for a detailed study of oral traditions from the point of view of cognitive psychology). Anthropologists and psychologists have found that ease of memorization in oral societies depends on specific contents and tasks (Scribner and Cole 1981: 138). It has also been found that people whose school education was based on memorization do not perform significantly better in memory tasks than other literates, the main divide being that between all literates and illiterates. Trained 'memorizers' did better only in such specific tasks as recalling the order of the words in a sentence. This skill, however, was not transferred to generic serial recall, that is, the ability to recall items of a list in a given order (Scribner and Cole 1981: 221–33, 125). This ability is an effect of schooling and of literacy, and we can assume that schooled fifth-century Athenians might have developed it as well. Serial recall is linked to long-term memory lexical (semantic) representations (Hulme et al. 2003), which, as we have seen, play a role in speech comprehension. However, it is still unclear how these systems interact (Allen and Hulme 2006). Therefore, the only conclusion we can draw is that ancient Greek schooled individuals could access the semantic properties of words quite efficiently. As we shall see, this should not affect the models of speech comprehension that will be applied in this study.

end of a clause). For this reason, we must base our 'reverse engineering' on the psycholinguistic findings concerning languages that are typologically similar to Classical Greek (see 4.3.2).

4.3.1 Language comprehension: an overview

Understanding language is a cognitively complex task. When we hear or read a sentence, information is gathered from many different sources (cf. Warren and Gibson 2005: 751–2 with further references):

- The words activate their representation (their 'entry') in the mental lexicon, in which their meanings and some of the possible syntactic relations they allow are stored (cf. Aitchison 2012: 132–3, Traxler and Tooley 2007: 63).
- The syntactic relations among words (as syntactic constituents) are construed, parsed, and interpreted for their semantic content (for instance, if a noun is interpreted as the subject of a verb, such an interpretation concerns both its syntactic relationship to the verb and its semantic role, which is different from that of, say, a word interpreted as the direct object of a verb).
- A relationship is established between words and their referents—the items or events, states, etc. (any 'entity that has a spatio-temporal location', Gibson 1998: 12; see also Kibrik 2011: 3–7) that they evoke in discourse (cf. Hengeveld and Mackenzie 2008: 113). The assignment of referents to words depends on the context of linguistic communication (cf. Clark and Murphy 1982, Ariel 1988, and Vonk et al. 1992): words may refer to entities that are known by the participants to 'exist' (if only as mental constructs), or that are physically present in the situation in which the linguistic exchange takes place, or that have been previously evoked (or implied) in the text or conversation (discourse context). This process has been shown to play a role in language comprehension and is especially crucial for words like relative, anaphoric, or demonstrative pronouns or adjectives, that get their meaning only from the discourse context (Kaiser and Trueswell 2004, Warren and Gibson 2002).

Different theoretical models have been developed to explain and describe how sentence processing works and how different types of

information (lexical, syntactic, discourse) are used in language comprehension (see van Gompel and Pickering 2007: 292 and 301, cf. Levy 2008: 1127–8; see van Gompel 2013 for excellent summaries of current theories and issues). These models generate predictions as to the processing difficulty induced by specific linguistic structures. Such predictions are tested by means of experiments which allow observation and measurement of the difficulties experienced by the participants. According to how each experiment is designed, measurements account for either on-line or off-line processing (Konieczny 2000). In off-line experiments, participants are presented with entire sentences, which they can read at their own pace, and they are subsequently tested for comprehension. In on-line experiments, on the other hand, participants are presented with *one word at a time*. This input can be either auditory (an audio recording of a sentence is played) or visual (words are displayed on a computer screen). The on-line experimental condition is a good approximation of oral communication, and on-line difficulty is a dynamic property, which cannot be calculated for a sentence as a whole but varies with each word. Off-line methods test the overall comprehension of the linguistic material, whereas on-line methods measure how language users process the linguistic input as they perceive it and aim to capture the unconscious operations that occur during sentence processing (see Love and Swinney 1998: 155–6). In on-line experiments, the difficulty of specific parts of the linguistic material is assessed through a number of different procedures (see e.g. Vasishth and Drenhaus 2011). One possibility is to measure the activity of the brain while the participant accesses the sentence and to detect ERPs (event-related potentials), that is, electric responses of the brain in correspondence to the linguistic stimuli. Specific types of processing difficulties are related to specific types of electric signals. Another possibility is to measure the eye movements of the participants as they read visually-presented sentences from a screen. The rationale of such experiments is that the longer a participant fixates a word (reading time), the higher the cognitive activity (and the processing difficulty) associated with that word. A third type of experimental procedure is self-paced reading: participants are instructed to try and make sense of a sentence whose words are presented on a computer screen one at a time; in order to be able to see subsequent words, participants need to press a key. Time intervals between presses correspond to reading times for each word.

Some advanced language comprehension models aim not only at explaining why and under what conditions the observed comprehension difficulties occur, but also at developing more or less ambitious mathematical models to predict reading times for every word in a sentence (e.g. Levy 2008). Comparing such predictions with actual reading times is the most straightforward way to assess the validity of models and their theoretical grounds. In the absence of an experimental benchmark, it is out of the question that we attempt to apply any such mathematical model to Attic texts.

4.3.2 Sentence processing

When we hear or read a sentence, comprehension starts as soon as the first word is perceived. We start interpreting the syntactic, pragmatic, and discourse information before the sentence (or a phrase) has been perceived in its entirety ('shallow processing'; see Dąbrowska 2004: 23). Experimental evidence supports the consensus view that language comprehension is an incremental process: as each word is encountered, either in reading or listening, we tend to maximize the degree of interpretation of the partial input, without waiting for the utterance (or written sentence) to be complete (see for instance Schlesewsky and Bornkessel 2004, van Gompel and Pickering 2007: 289, Levy 2008: 1129, and Levy et al. 2013). As part of this process, we generate a mental representation of the syntactic relationships between words; as new words are encountered, we try to add and integrate them into such a partially parsed structure as soon as possible (Warren and Gibson 2005: 753, cf. Gibson 2000: 102–5). The simplest way in which such relations can be described is in terms of dependencies (see Appendix A.1). In particular, in experimental studies word-order patterns are commonly presented using Mel'čuk's dependency theory (Mel'čuk 1988, Mel'čuk 2009)—which will be adopted as a descriptive framework in this study as well—especially due to its effectiveness in representing syntactic structures regardless of the actual linear order of the constituents of the sentence, a particularly desirable feature when describing free-word-order languages such as Classical Greek.[35]

[35] Hierarchical structures could be described applying other formalisms, such as parse trees in which simple constituents (words) are grouped into higher-level

As a simple illustration, let us consider a very basic structure such as the English sentence '*the cat moved*', taken in isolation. As we hear or read this sentence, each word we encounter activates its representation (its 'entry') in the mental lexicon, as mentioned above (4.3.1). At the same time, each word raises expectations for other elements to follow, or satisfies expectations raised by previous elements or by the discourse context (Konieczny 2000: 628). For instance, when the definite article *the* is encountered, it raises the expectation that a noun will follow either immediately or, for example, after one or more attributes—these should not be determiners (e.g. possessive or demonstrative adjectives) that may not combine with the article in English. At the same time, we predict that a finite verb will occur at some point after the noun in order to build up a complete sentence together with it (at least in a null discourse context).[36] This verb must not be impersonal—that is, that it must admit a noun as its subject. If it occurred immediately after '*the*', a finite verb would be unexpected and hard to process. As '*cat*' is encountered, the expectation for a noun is satisfied. This noun also narrows down the range of verbs which could complete the sentence. Such verbs must refer to actions which can be performed by cats in the specific discourse context the sentence is part of. *Move* falls into this category (which includes verbs like *run*, *eat*, *purr*) and, as a consequence, '*moved*' is unsurprising and easy to process. Conversely, a verb form like '*sings*' would have been harder to process. However, this would not be the case if this sentence occurred in a fictional story where humanized cats could sing (Nieuwland and Van Berkum 2006, cf. Roland et al. 2012). Thus, when '*moved*' is encountered, it satisfies all the expectations set up by '*the*' and '*cat*', and '*the cat*' is immediately attached to the verb and interpreted as its subject—this is what the integration process mentioned above consists of. *Move* may be used both with and without a

constituents (phrases), as per the analyses of context-free grammars. Such descriptions work better for languages in which higher-level constituents are normally continuous, which, as we shall see (4.3.5), is not the case with Classical Greek. Miller (1999: 21–4) has shown that all structural descriptions based on a dependency grammar can be turned into descriptions based on a context-free grammar given an appropriate interpretation function. This means that, given the same structure, a description in terms of dependencies can be univocally translated into one in terms of constituency (but the reverse does not hold).

[36] The answer to a who- or what-question, for instance, may consist of a noun phrase only.

direct object, but it occurs more frequently without one, which induces a so-called 'intransitive bias' in the interpretation of its forms as sentences are processed (see MacDonald 1994: 186). This means that in an on-line comprehension task, readers or hearers would consider the string '*the cat moved*' as a complete sentence. The expectation for an object to follow (e.g. '*its head*') can be brought about both by intonation (cf. DeDe 2010) and by the discourse context; for example, the transitive interpretation of *move* may be primed by a sentence like '*the dog shook its tail*' (that is, in a sentence like '*the dog shook its tail and the cat moved*', the verb *moved* may be perceived as lacking a direct object; cf. Sturt et al. 2010).

Now, two major groups of theories of sentence comprehension exist (see Levy et al. 2013: 462–5 for a review). Some are based on the assumption that interpretation is fundamentally driven by expectation: the more expected an element is, the easier it is to process. Other theories are based on the assumption that comprehension difficulties derive from the excessive 'cognitive load' that certain linguistic structures place on working memory (that is, 'the set of cognitive processes involved in the temporary storage and manipulation of information', Gathercole 2008: 33–4).[37]

According to an expectation-based theory like the surprisal hypothesis (Levy 2008), highly expected words are easy to process and their integration is fast, whereas unexpected words are hard to process. The expectedness of a word in a specific position in the linear order is related to the frequency of the word-order pattern to which it belongs in the readers'/hearers' linguistic experience (cf. Dąbrowska 2004: 25–6). Word-order patterns can be defined in either structural or collocational terms (Levy et al. 2012: 15–16). Structural descriptions focus on the syntactic properties of the words each pattern consists of. The structure of a phrase like '*nice person*' may be described, for instance, as 'modifier + head', or 'modifier adjective + head noun' (specifying word classes), or 'modifier adjective + head animate singular noun' (specifying morpho-semantic features), or 'adjective modifying *person*', or '*nice* modifying noun', or '*nice* modifying *person*' (specifying lexemes), and so on—the properties to

[37] Expectation and memory also play a role in comprehension at the level of discourse, where connections are established between sentences (see Rohde and Horton 2014, Hamilton and Oakhill 2014). From a pragmatic and rhetorical point of view, this contributes to 'content-clarity' (or 'understandability').

include in the description are those relevant to the identification of patterns in the design of an experiment or to the interpretation of the experimental results. Collocational descriptions, instead, simply focus on the exact sequence of the words or word classes: '*nice person*' would be described as '*nice* + *person*' or as 'adjective + noun', with no reference to the syntactic or semantic relationship between the words and with the elements being listed in the same linear order as they appear in the sentence. Experimental research supports the idea that expectation in language processing is determined by the frequency of structures more than by collocations (Levy et al. 2012). It has been claimed that expectation also depends on an abstract judgement of grammaticality rather than on the actual frequency of constructions in a language; this claim is based on a seriously flawed study (Bornkessel et al. 2002, refuted by Kempen and Harbusch 2003) and must be rejected as such, but it remains true that the grammatical and pragmatic possibilities of a language underlie language production (rather than comprehension), and therefore they might ultimately determine the frequency of certain patterns.

Going back to the example sentence '*the cat moved*' (taken in isolation), the 'surprisingness' of each word respectively corresponds to the probability of the singular noun '*cat*' (with all its semantic properties) following the definite article ('*the*') by which it is accompanied, and the probability of the verb form '*moves*' (with all its semantic properties) following the noun '*cat*'—its subject—directly following its article. Likewise, we can determine whether '*moves*' sets up the expectation for a direct object in probabilistic terms—as we have seen, this verb is preferentially interpreted as intransitive (if the sentence is taken in isolation and without explicit prosodic information) precisely due to the statistical fact that it is used more frequently in intransitive than transitive constructions. If the sentence contained a direct object like '*its head*', the calculation of the surprisingness of '*its*' would have to take this usage feature of the verb *move* into account—it would correspond to the probability of a possessive adjective ('*its*') following the verb *move* used transitively and preceded by its subject modified by a possessive adjective; the surprisingness of '*head*' would correspond to the probability of the noun '*head*' (with all its semantic properties) functioning as the direct object of *move*, being modified by a possessive adjective, and following a transitive verb preceded by its subject determined by an article. The probabilities must be calculated using a corpus which should represent as

faithfully as possible the 'standard' linguistic experience of a 'standard' native speaker of the language studied (Levy et al. 2012: 15–16, cf. Levy 2008: 1145–6). Of course, linguistic experience might vary across different individuals according, for instance, to their innate ability and learning (cf. Wells et al. 2009).

Memory-based theories, instead, predict that a major source of difficulty in language comprehension is the distance between constituents that should go together in the syntax of the sentence (this is called the 'locality effect'; see e.g. Gibson 1998). In syntactic parsing, the integration of two constituents with one another is more effective if the elements are close to each other in the linear order of the sentence. When the first constituent is encountered, its mental representation is activated in working memory, from which it needs to be retrieved as soon as the second constituent is encountered. Long distances between the two constituents may cause the representation of the first one to decay from memory (Gibson 2000: 95–6, cf. Hawkins 2007), while other elements occurring between them in the sentence may be activated in the meantime. The retrieval of such representations from working memory is also sensitive to the cognitive 'accessibility' of the referents designated by words: the mental representations of certain entities may be more easily available to the listener's or reader's cognition than others, in that such entities may have been introduced (and activated) in discourse, or they may be inferred from the physical situation in which the linguistic exchange takes place, or they may be part of the general world knowledge of the listener or reader (cf. 4.3.1 and Ariel 1988). The more accessible the referents, the easier the retrieval of a mental representation from memory (cf. Warren and Gibson 2002: 103–4, Kaiser and Trueswell 2004: 140–1, and Traxler et al. 2005: 216). The retrieval can be disrupted by the interference of elements similar to those that must be integrated together (see Warren and Gibson 2005: 754–5, Fedorenko et al. 2006, Gordon et al. 2006, cf. Martin and McElree 2009). For example, in a sentence like '*The worker was surprised that the resident who said that the warehouse was dangerous was complaining about the investigation*', when the verb '*was complaining*' is encountered, the subject '*the resident*' must be retrieved. The verb provides cues for retrieval: the subject must be a singular, possibly non-collective, noun denoting an entity that is able to perform the action of complaining. Between the subject and the verb, however, the noun phrase '*the warehouse*' intervenes. The grammatical and

syntactic properties of this noun phrase overlap with those of the real subject and interfere with its retrieval. If the similarities between the subject and the intervening noun phrase were extended to semantics (for instance, should the intervening phrase be '*the neighbour*'—an entity that can complain—instead of '*the warehouse*'), the effect of interference would be even stronger (see Van Dyke 2007 with further references for interference theories).

Let us now consider these sentences:

(a) The cat that hisses ran away.

(b) The cat that the dog scared ran away.

An important difference between them lies in the syntactic function of the relative pronoun '*that*'. In (a) the pronoun is the subject of the verb of the relative clause ('*hisses*'), whereas in (b) the pronoun is the object of '*scared*'. A wide number of experiments (see Levy et al. 2013: 462 for a review) have found that, in many languages, sentences with the same pattern as (a) are easier to process than those with the same pattern as (b).

Expectation-based and memory-based theories account for this phenomenon in different ways. According to expectation-based theories, sentences like (a) are easier to process because the relative pronoun is both the subject of the relative clause and the first word in the clause; the resulting sequence (subject–verb) is canonical in English. On the contrary, in (b) the relative pronoun is the direct object, and the resulting word order (object–subject–verb) is non-canonical in English—that is, it is not statistically frequent in the use of the language. The peak of comprehension difficulty should occur when the noun phrase '*the dog*'—which is unexpected on this account—is encountered. A memory-based account would start from the observation that in (a), when the verb '*hisses*' is encountered, the relative pronoun '*that*' is the only pending element that must be integrated in the sentence—and it is only the verb that provides the syntactic 'joint' that allows such an integration—whereas in (b) both the pronoun '*that*' and the noun phrase '*the dog*' are pending in working memory and must be integrated in the sentence. Therefore, the difficulty peak should be reached when '*scared*' is encountered and triggers this complex cognitive operation (the retrieval from memory and integration in the partially parsed syntactic structure of both '*that*' and '*the dog*'). Another prediction of a memory-based

account would be that when '*ran away*' is encountered in both (a) and (b), its subject ('*the cat*') must be retrieved from working memory. The more syntactic elements intervene between '*the cat*' and '*ran away*', the harder the retrieval will be, since the representation of '*the cat*' in working memory would decay over time; therefore, the longer distance between the subject and the verb of the main clause in (b) would also contribute to the higher difficulty of this sentence. In particular, difficulty should reach another high point as this verb is encountered. This is a point on which the predictions of memory-based and expectation-based theories differ radically. On a memory-based account, if the expectation for a certain syntactic is set up early in the sentence, this expectation grows higher and higher with every element that precedes the one that satisfies it. At the same time, when a syntactic element of a certain type occurs, the expectation for another element of the same type in the same clause decreases. As a consequence, the range of element types that might occur in the clause narrows down, and the expectation for any possible but not yet encountered type grows (cf. Levy 2008: 1146). For instance, when a reader or hearer encounters the subject of a clause, the expectation for another subject is eliminated and one for a verb arises, as we have seen. If other constituents occur between the subject and the verb, the expectation for a verb increases as each of them is encountered. The more numerous the constituents, the faster the verb is eventually processed, which is the opposite of what memory-based accounts predict. In the example sentences, expectation-based accounts would predict that the more elements intervene between '*the cat*' and '*ran away*', the more the expectation for '*ran away*' rises, and therefore this verb should be very easy to process. Moreover, the meaning of a verb like '*scared*' in (b) would even make '*ran away*' more predictable from a semantic point of view, while on a memory-based account, the retrieval of '*the cat*' would be further complicated by the fact that, in both (a) and (b), the elements that separate '*the cat*' from '*ran away*' include another verb in the third person singular ('*hisses*' and '*scared*'), which might interfere with the integration of '*ran away*' (which is expected to have the same value in the morphological categories of person and number). From this point of view, the comprehension of (b) would also be less optimal than that of (a) because another noun phrase ('*the dog*') intervenes and might interfere with the retrieval of '*the cat*'.

When put to the experimental test, not all theories predict difficulties equally well in different languages (see Levy et al. 2013: 465, Jäger et al. 2015: 116). Memory-based theories are supported by experimental data for languages with relatively low morphological marking of syntactic functions and whose word order is relatively rigid, as, for instance, English and French (results for Chinese are controversial, and a recent study supports the idea that processing in this language is better explained by expectation-based accounts: see Jäger et al. 2015). In English, for instance, a sentence like '*the coach smiled at the player tossed the frisbee*' (analysed as 'the player who was tossed the frisbee') is harder to process than '*the coach smiled at the player thrown the frisbee*' (analysed as 'the player who was thrown the frisbee'). The sentences correspond exactly to one another from a structural point of view: from the point of view of anticipation (and probability), they should score exactly the same. However, '*thrown*' cannot be but a past participle, whereas '*tossed*' is morphologically ambiguous, since it could be both a past participle, as is the case in this sentence, or a past tense. The higher difficulty of the sentence containing '*tossed*' shows that this is exactly how it might be interpreted by some readers or hearers, and this is due to the nearness of '*the player*', a very plausible subject for the verb *toss* (see Levy 2008, cf. Nakatani and Gibson 2010: 108). In short, in a context of this kind the effects of retrieval processes prevail over those of anticipation. In general, anticipation applies to local dependencies, but longer dependencies, especially when syntactic discontinuity is involved (Levy 2005: 142), are subject to locality.

Expectation-based theories are most clearly supported by results of experimental studies of comprehension in Hindi, German, and Japanese, languages where verbs occur in the final position of their clause more often than not, where the other, non-verbal constituents can be arranged rather freely, and where morphology is relatively rich. On the other hand, locality effects show in a language like German, too. However, such effects show much more substantially in off-line than in on-line experiments. When readers are asked to rate the acceptability of sentences, sentences with short dependencies score higher than those with long dependencies. According to the 'difference hypothesis' (Konieczny 2000: 643–4), when they perform this task readers subconsciously generate sentences with the shortest dependencies possible. As they compare them with those showing longer dependencies, they tend to prefer the short version, which

results in the low score for such sentences. This means that locality affects language production more than processing: longer dependencies imply higher memory cost, which hinders on-line production (Hawkins 2007). In on-line comprehension, locality effects are generally weaker than anticipation effects (see e.g. Nakatani and Gibson 2010: 107 on Japanese and Konieczny 2000 on German).

Such models of language comprehension, however, are not necessarily mutually exclusive. This is shown by a most instructive recent study of comprehension in Russian, a language which shares typological features both with languages to which memory-based accounts apply and with those to which expectation-based accounts apply (Levy et al. 2013: 465):

> Like Chinese, English, and French but unlike Hindi, German, Korean, and Japanese, the predominant word order in Russian is [subject-verb-object]. [. . .] Unlike the [subject-verb-object] languages mentioned above, however, Russian has a rich morphological case system which marks the grammatical roles of verbal dependents. [. . .] Furthermore, Russian word order is freer than any of the above languages: although [subject-verb-object] is the predominant word order, all permutations of major clausal constituents are in fact permissible.

Experimental results for Russian support both groups of theories. Relative clauses in Russian—just as those of Classical Greek—allow both of the following patterns:

(c) Relative $\text{Pronoun}_{\text{NOMINATIVE}}$ $\text{Noun}_{\text{ACCUSATIVE}}$ Verb

(d) Relative $\text{Pronoun}_{\text{ACCUSATIVE}}$ $\text{Noun}_{\text{NOMINATIVE}}$ Verb

Both types resemble the English pattern of (b), since two constituents that depend on the verb precede it. In both cases, the peak of processing difficulty occurs when the verb is encountered, as memory-based theories predict. However, a noun in the accusative following the relative pronoun in the nominative in a clause of type (c) is harder to process than a noun in the nominative following the relative pronoun in the accusative in a clause of type (d). The working-memory load is exactly the same, and this effect can rather be explained as depending on the frequency (and consequent expectedness) of the respective word-order patterns in Russian. The memory-based processing difficulty for the final verb is connected to the fact that verb-final or verb-initial clauses in Russian are far less frequent that verb-medial ones. On this account, such a difficulty would indicate that 'verb-medial

languages tend to exhibit the general patterns predicted by memory-based theories, whereas verb-final languages tend to exhibit the general patterns predicted by expectation-based theories' (Levy et al. 2013: 482). On the other hand, the comprehension advantage of type (d) over type (c) suggests that, in a language in which syntactic constituents may be arranged freely (regardless of the Russian tendency for the medial placement of the verb), expectation effects may be predicted to show—a remark that is especially relevant for Classical Greek, a free-word-order language (cf. Luraghi 2014).

At the same time, Vasishth and Drenhaus (2011) have shown that the working-memory load of syntactic integration processes plays a role in the on-line comprehension of German, one of the languages whose comprehension has been shown to be driven by expectation. In particular, the effect of interference overrides expectation in sentences like the following:

(e)

Paula	*und*	*Sophie*	*grüssten*	*den*	*Direktor,*	*den*
Paula	and	Sophie	greeted	the	director	whom
die	*Schwester*	*von*	*Maria*	*und*	*die*	*Mutter*
the	sister	of	Maria	and	the	mother
von	*Franziska*	*ignoriert*	*hatten.*			
of	Franziska	ignored	had.			

'Paula and Sophie greeted the director whom the sister of Maria and the mother of Franziska had ignored.'

On an expectation-based account, the compound verb form *ignoriert hatten*, which occurs at the end of the relative clause, should be easily integrated into the structure of the sentence because it would be highly expected after the long sequence of constituents that separate it from the relative pronoun *den*. However, Vasishth and Drenhaus' experiments have found that difficulty rises precisely in the region of that verb. This has been explained as a consequence of the presence of proper names (the subjects of *ignoriert hatten*) which interfere with the retrieval of *Direktor* as the direct object of the verb (Vasishth and Drenhaus 2011: 74).

On these grounds, one may reasonably argue that it is likely that native sentence-processing difficulty in Classical Greek would be predicted by expectation-based models, provided that a memory effect such as interference is taken into account. As mentioned above, the assessment of the expectedness of linguistic structures in

on-line comprehension should be calculated using the statistical data that may be extracted from a linguistic corpus that should be both representative (it should include as many linguistic varieties as possible) and balanced (the amount of text representing each variety should correspond to the proportion of each variety in real-life 'standard' linguistic experience; see Hunston 2008). Designing and producing a corpus of this kind is a highly ambitious task—the very ideal of a representative and balanced corpus is something of an abstraction—even for modern languages. If we were to design one for Attic, the difficulties we would incur would be very serious. Whereas the modern language corpora that are normally used in frequency investigations include (as they must) records of spoken language, all the Attic we have is literary or epigraphic. Even if we decided to make do with what Slings (1992) calls 'quasi-spoken Attic', much of it consists of metrical texts (comedy), which, as a matter of principle, may constrain word order in ways which would not be common in natural language. Moreover, the extant Attic corpus is itself the result of several stages of selection and would include only a limited number of linguistic varieties, and there are no grounds to assume that those varieties are represented in a balanced way. The specific contents of the surviving Attic texts correspond to a limited set of registers, which undermines the representativeness of the corpus (cf. Biber et al. 1998: 30–5). In short, a corpus based on Attic literature and inscriptions would be hopelessly inadequate. Since a tenet of expectation-based theories is that 'we generate and track predictions based on our knowledge of grammar, and that the degree of difficulty that we experience during sentence comprehension is determined, at least in part, by the extent to which our expectations for upcoming structure are met' (Jäger et al. 2015: 116), we may assess the expectedness of structures in Attic based on the grammatical possibilities of the language. On this point, it must be observed that descriptions of Attic grammar are ultimately based on literary language (cf. Slings 1992: 100), that is, on the very corpus of texts that would be inadequate for a frequency study. This represents an important limitation: we cannot apply a computational model to the study of Attic, nor can we calculate numeric difficulty predictors which we should expect to be correlated to the empirical values we would obtain if we were able to perform comprehension experiments on native speakers of Attic. If we were to assess the expectedness of the phrase *τὸν τυρόν* ('the cheese') in a simple sentence like *ὁ μῦς*

δάκνει τὸν τυρόν ('the mouse is biting the cheese'), we would only be able to say that, since the verb is transitive, it would not be surprising to encounter a direct object in the accusative immediately after it, and we could also assume that a native speaker would have signalled that the utterance had not ended at *δάκνει* by means of intonation (see 4.4.1).

The purpose of the present study is to assess the processability of Attic prose scripts and scriptures in the communicative situations for which they were conceived. Such situations would consist of either recitation (*hypokrisis*) or reading (*anagnosis*), which could be a solitary or group activity, in which case the written text was read aloud. This means that the comprehension tasks we should reconstruct correspond to the processes by which an auditory input is interpreted under an on-line condition. At the same time, the evidence for ancient perceptions of clarity and obscurity (in terms of processability) presented at 4.2 is based on the ancient rhetoricians' off-line judgement of the linguistic material that they discuss. As we have seen, on-line processing difficulty is a dynamic property that varies with every constituent of the sentence—it is a local, not a global phenomenon. The exact location of the offending linguistic element—the construction that generates difficulty—is not always explicitly indicated in the ancient sources, and may be figured out by reconstructing a dynamic, word-by-word, and incremental parsing of ancient example sentences. Ambiguity, too, may be temporary and local, since it often depends on wrong parses and interference effects. When an English 'garden-path' sentence such as '*the man returned to his house was happy*' is read or heard, '*returned*' may be initially interpreted as a past tense and reanalysed as a participle only when '*was*' is encountered. The ambiguity is localized on '*returned*' and is eliminated by reanalysis, which comes at a cognitive cost and induces the perception of linguistic difficulty (see von der Malsburg and Vasishth 2011, van Gompel et al. 2005, and Meltzer and Braun 2013). In off-line evaluation, sentences containing local ambiguities but whose syntax and meaning are not globally ambiguous would not be judged ambiguous. Off-line judgements of ambiguity would be made only for sentences that admit more than one semantically plausible syntactic analysis. This is exactly the case with the examples of ambiguity presented in the Greek sources discussed above (4.2). Arguably, off-line examination would be the only way in which the semantically implausible interpretation of *ἰδεῖν τοῖς ὀφθαλμοῖς τυπτόμενον* (Arist. *SE* 20 177b10–12) as 'to see someone beaten by means of one's eyes' may be construed; in on-line, incremental

comprehension, the propositional phrase *τοῖς ὀφθαλμοῖς* would be integrated in the partially parsed syntactic structure as soon as possible, and the syntactic constituent to which it would be immediately attached would be the verb *ἰδεῖν*. Locally ambiguous sentences would not be judged ambiguous by an ancient 'linguist'; however, local ambiguities may still figure in passages deemed obscure by ancient rhetoricians (whether or not they give any detailed explanation of their obscurity).

Let us now examine the *metathesis* of a sentence of Xenophon made by 'Demetrius' (*Eloc.* 198) discussed above, examples (22) and (22a). The original sentence reads:

> *καὶ ὅτι τριήρεις ἤκουεν περιπλεούσας ἀπ' Ἰωνίας εἰς Κιλικίαν Τάμον ἔχοντα τὰς Λακεδαιμονίων καὶ αὐτοῦ Κύρου.*
>
> 'And that he heard that Tamos was commanding triremes which were sailing around from Ionia to Cilicia, those which belonged to the Lacedaemonians and to Cyrus himself.' (X. *Anab.* 1.2.21)

The paraphrase presented by 'Demetrius' is:

> *τριήρεις προσεδοκῶντο εἰς Κιλικίαν πολλαὶ μὲν Λάκαιναι, πολλαὶ δὲ Περσίδες, Κύρῳ ναυπηγηθεῖσαι ἐπ' αὐτῷ τούτῳ. ἔπλεον δ' ἀπ' Ἰωνίας· ναύαρχος δ' αὐταῖς ἐπεστάτει Τάμος Αἰγύπτιος.*
>
> 'Triremes were expected in Cilicia, many Laconian and many Persian, built for Cyrus for this very purpose. They sailed from Ionia; in charge of them as a commander there was Tamos the Aegyptian.'

As we have seen, 'Demetrius' maintains that the sentence is unclear because of *plagiotes* and purports to make its form clearer by rewriting it *ex eutheias*, which should indicate that the obscure 'oblique constructions' corresponding to the participles *περιπλεούσας* and *ἔχοντα* are turned into clearer 'direct constructions' (clauses with the verb in the indicative). Let us try to reconstruct why 'Demetrius' would have found Xenophon's version unclear—or less clear than his own—and how he operated to eliminate its difficulty. We may start with a dynamic, word-by-word parsing of Xenophon's sentence. First, the conjunctions *καὶ ὅτι* require a verb, and so does *τριήρεις*. *Ἤκουεν* satisfies these expectations. Since this verb is in the third person singular, it disambiguates *τριήρεις*, revealing that it is an accusative. Now, *ἀκούω* can govern a genitive of the direct source of the sound and an accusative of the thing or event about which one hears (cf. Schenkeveld 1992: 130–1 and Chanet 1988: 89). No article precedes *τριήρεις*, and it is not surprising that either a predicative participle or an infinitive should occur, specifying the

event in which the undetermined triremes are involved. As a matter of fact, a predicative participle follows immediately, together with its adjuncts (*περιπλεούσας ἀπ' Ἰωνίας εἰς Κιλικίαν*). From a syntactic and semantic point of view, this partially input sentence can be considered complete at this point. However, *Τάμον* follows, which might be surprising, and is left unintegrated until *ἔχοντα* is encountered. This participle is the real governor of *τριήρεις περιπλεούσας* and depends on *ἤκουεν*. It appears that the partial analysis of the sentence up to *Κιλικίαν* was wrong, and all that part of the sentence must be reanalysed by the hearer or reader. This is a cognitively demanding task, and this is why, one can argue, 'Demetrius' found this sentence difficult.

There are a few more factors which one should take into account as facilitators of on-line sentence processing. One is syntactic and semantic parallelism, a common rhetorical device in Attic literature (cf. Gagarin 1999: 169). An experiment on German speakers (Knoeferle and Crocker 2009, cf. Sturt et al. 2010) showed that sentences like (g) and (h) are processed faster than those like (f):

(f)	*Vor*	*einer*	*Stunde*	*bezwang*
	Before	an	hour	defeated
	der	*Gegner*$_{\text{NOMINATIVE}}$	*den*	*Fechter*$_{\text{ACCUSATIVE}}$
	the	adversary$_{\text{SUBJECT}}$	the	fencer$_{\text{OBJECT}}$
	und	*gerade*	*besiegt*	*den*
	and	currently	overwhelms	the
	Ringer$_{\text{ACC.}}$	*der*	*Erzfeind*$_{\text{NOM.}}$,	*wie*
	wrestler$_{\text{OBJ.}}$	the	arch-enemy$_{\text{SUBJ.}}$,	as
	der	*Journalist*	*schreibt.*	
	the	journalist	writes.	

'An hour ago the adversary defeated the fencer and currently the arch-enemy overwhelms the wrestler, as the journalist writes.'

(g)	*Vor*	*einer*	*Stunde*	*bezwang*	*den*
	Before	an	hour	defeated	the
	Gegner	*der*	*Fechter*	*und*	*gerade*
	adversary$_{\text{OBJ.}}$	the	fencer$_{\text{SUBJ.}}$	and	currently
	besiegt	*den*	*Ringer*	*der*	*Erzfeind,*
	overwhelms	the	wrestler$_{\text{OBJ.}}$	the	arch-enemy$_{\text{SUBJ.}}$,
	wie	*der*	*Journalist*	*schreibt.*	
	as	the	journalist	writes.	

'An hour ago the fencer defeated the adversary and currently the arch-enemy overwhelms the wrestler, as the journalist writes.'

(h) *Vor* *einer* *Stunde* *bezwang* *der*
Before an hour defeated the
Fechter *den* *Gegner* *und* *gerade*
fencer$_{\text{SUBJ.}}$ the adversary$_{\text{OBJ.}}$ and currently
besiegt *den* *Ringer* *der* *Erzfeind,*
overwhelms the wrestler$_{\text{OBJ.}}$ the arch-enemy$_{\text{SUBJ.}}$,
wie *der* *Journalist* *schreibt.*
as the journalist writes.
'An hour ago the fencer defeated the adversary and currently the arch-enemy overwhelms the wrestler, as the journalist writes.'

(i) *Vor* *einer* *Stunde* *bezwang* *den*
Before an hour defeated the
Fechter *der* *Gegner* *und* *gerade*
fencer$_{\text{OBJ.}}$ the adversary$_{\text{SUBJ.}}$ and currently
besiegt *den* *Ringer* *der* *Erzfeind,*
overwhelms the wrestler$_{\text{OBJ.}}$ the arch-enemy$_{\text{SUBJ.}}$,
wie *der* *Journalist* *schreibt.*
as the journalist writes.
'An hour ago the adversary defeated the fencer and currently the arch-enemy overwhelms the wrestler, as the journalist writes.'

The clauses in sentence (g) are syntactically parallel (accusative-nominative, accusative-nominative), while those in sentence (h) are semantically parallel (athlete-opponent, athlete-opponent). Sentences which show both syntactic and semantic parallelism, like (i), are processed faster than all other conditions.

Lastly, grammatical agreement is a facilitating factor in morphologically rich languages: in constructions in which an element is modified by the preceding one (e.g. adjective + noun), the syntactic function of the whole phrase is comprehended as soon as the modifier is encountered. For instance, in the Finnish phrase *suureksi taloksi* ('for a big house') the translative case ending *-ksi* is attached to both the adjective *suuri* and the noun it modifies (*talo*). The noun form *taloksi* is processed more easily in such a sequence than in one like *monesti taloksi* ('often for a house'), where the same form is preceded by a non-agreeing adverb, which indicates that the phrase *suureksi taloksi* is integrated in the sentence as soon as the adjective is processed and that the noun is highly expected. The same effect has been

registered for cases of phonologically opaque agreement (in other words, the inflectional forms need not be similar to each other) as is the case with the nominative, which in Finnish is expressed by a zero morpheme (e.g. *uusi tarina* 'the long story'; see Vainio et al. 2008, Hyönä and Vainio 2009).

4.3.3 Sentence length

Long sentences consist of many words. Theoretically, a large number of constituents can be combined in a large number of ways, producing ambiguities and several possible parses (candidate parses, Dąbrowska 2004: 11). However, as we have seen, sentence comprehension is an incremental process. This rules out the idea that sentence length affects comprehension per se (*pace* MacDowell 2009: 398, Denniston 1950: 15). As Gagarin (1999: 170–1) rightly remarks, the large size of sentences 'allows for, though it does not require, greater syntactical complexity'. In other words, long sentences can be obscure, just as any other utterance, owing to other structural features. For instance, more words allow for more local ambiguities and longer syntactic dependencies, which might induce locality effects. Therefore, sentence length is not a significant feature as far as the processability of language is concerned. It is true, however, that brevity is a rhetorical quality often associated with *sapheneia* in ancient Greek rhetoric; as we have seen (4.2), this quality may concern either the content alone and be related to the sheer quantity of 'idea units' in a given stretch of discourse—see example (17)—or it may concern the relationship between form and content. This relationship is governed by an economy principle—a notion that has been explored especially in modern linguistics and information theory (see Juola 2008: 90–1). Economy operates at both ends of communication. From the point of view of the speaker, economy of language consists in expressing contents in the most concise form possible (in other words, using as few linguistic signs as possible). The extent of reduction is proportional to the amount of information that speaker and listener share—the more information can be inferred from discourse or the extra-linguistic context, the more concise the expression may (or should) be (cf. Rubin 1995: 69). From the point of view of the hearer, economy consists in the minimization of the comprehension effort and requires that the speaker be easily

understandable. In Juola's (2008: 90–1) words, 'a certain minimum amount of information must be conveyed in the speaker's signal so that a listener can distinguish his messages, but at the same time, too much useless information will clog things up'. The right balance to which the ancient rhetoricians allude—one must avoid *adoleschia*, but excessive *syntomia* results in *asapheia*—would be determined precisely by these requirements (cf. also Leech 1983: 67–8). Interestingly, corpus studies have shown that sentence-length frequencies tend to fit the same type of distribution across different languages: short sentences are more frequent than long ones, but very short sentences (< 3 words) are rare (Sigurd et al. 2004, cf. Kelih and Grzybek 2005, Grzybek et al. 2008), as shown in the graph below, which is based on the Brown corpus of English (Figure 4.1).

According to Chafe (1994: 108–19), the natural way in which information is packaged in spontaneous, conversational speech follows the principle 'one new idea (that is, only one new referent, event, or state) per intonation unit'—a segment of language identified by its prosodic features and which, in cognitive terms, corresponds to 'the amount of information that is processed at one time' (Scheppers

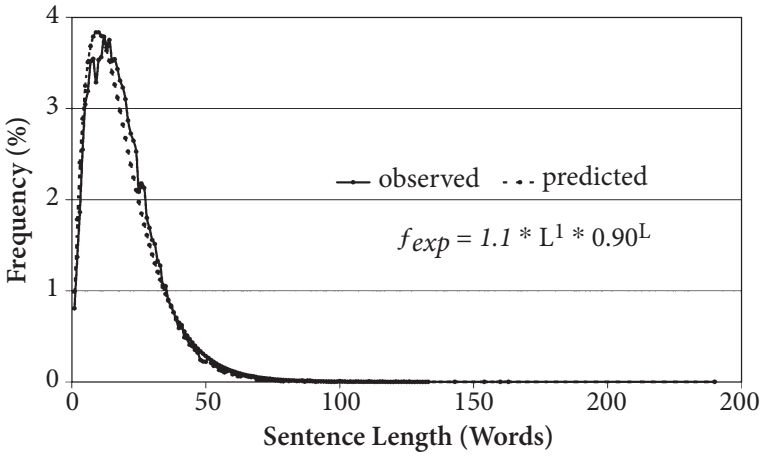

Figure 4.1. Sentence frequencies on the basis of sentence lengths (measured in words) in the Brown corpus of English (from Sigurd et al. 2004: 50). Reproduced with permission of John Wiley and Sons.

2011: 24) or 'to the contents of working memory' (Rubin 1995: 69). As Bakker (1997: 99) explains:

> A piece of information, or cluster of interrelated ideas, is simply too large to be conceived of in consciousness as one synthetic, integrated whole; it has to be broken down into its component parts, by a principle that has been called by Chafe the 'one new idea constraint': due to the limits of human consciousness no linguistic unit can contain two separate ideas, or distinct items of information. If a given complex idea contains two items of new information, these are most likely to be presented as two separate intonation units. The question what constitutes an idea, finally, will depend on the context within which something is focused on and verbalized. The idea of Agamemnon or of Atreus's son, for example, will be verbalized as a separate unit in a context in which the poet is concerned with tracking this character [. . .]; but it will be part of a unit when the description of an event is called for, as in the case of 'they were in the tent of Atreus's son'.

The principle 'one new idea per intonation unit' is primarily identified as a processing limitation on language production, even though Chafe is willing to extend its validity to language comprehension—which he presents as a mere assumption ('it may be that neither the speaker nor the listener is able to handle more than one new idea at a time', Chafe 1994: 109). In this connection, Chafe (1994: 55) describes the intonation unit as being 'of exactly the right size to be processed in its entirety with the help of echoic [working] memory', which 'allows us to process sound sequences as wholes, not just "from left to right" as the sound enters our ears'. In other words, intonation units would correspond to the maximal amount of syntactically/semantically parsed linguistic material (which need not correspond to an entire sentence or clause, for that matter) that may be interpreted as a single new-information-bearing unit. If we accept this, we may surmise that intonation units that present more than one new 'idea'—which should be barred from spontaneous speech—should be difficult to process. The problem with this hypothesis is that virtually any syntactic element may be argued to correspond to a cognitive/intonation unit; moreover, for a dead language like Classical Greek, there are no auditory records of actual intonation units, which may only be tentatively reconstructed. Scheppers (2011: 224–5), for instance, adopts word-order and syntactic criteria, even though, as Bakker (1997: 48) remarks, intonation units 'are in principle not predetermined

by any kind of linguistic structure'—that is to say, 'grammatical' criteria may capture only part of the possible prosodic boundaries which identify spoken intonation units. In fact, Bakker bases his own identification of intonation units on the very cognitive principle that each of them may contain no more than one new 'idea'—a procedure which would turn the working hypothesis explored here into a blatantly circular argument.

4.3.4 Sentence structure

Modern scholars often regard sentence complexity as a factor affecting the comprehension of texts. In particular, it is often taken for granted that parataxis is easier to process than hypotaxis (Gagarin 1999: 169) and that, in general, complexity can lead to obscurity (Allan 2007: 93, MacDowell 2009: 398). Now, coordinated clauses, even in long chains, are frequent in spontaneous spoken language.[38] From a psychological point of view, this tendency might prove only that the production of paratactic structures is easier and more natural and does not reveal much about their comprehension (see Rummer et al. 2003: 545 with further references).[39] If processing is taken into account, the picture is quite different.

Experimental studies on memory have shown that subordinate clauses are integrated with the main clause in a single memory chunk, whereas coordinate clauses are stored in separate chunks. This separation is mnemonically inefficient and leads to an increased difficulty in the verbatim recall of paratactic sentences in comparison with hypotactic ones. However, no such effect is observed in the recall of content. This points to the fact that it is only syntactic information that is chunked as a consequence of the relatively low degree of syntactic integration connatural to parataxis (Rummer et al. 2003)—in short, parataxis does not imply semantic chunking. An advantageous consequence of syntactic integration is the immediate

[38] However, they often seem to lose their semantic meaningfulness, and polysyndetic coordinators behave more or less as fillers; see Beaman 1984: 56–61.

[39] Blänsdorf (1967: 6–41) argues that groups of parallel subordinate clauses, with similar function, mood, and tense are quite common in the 'periodic' style of Plautus and must have resembled Latin 'Umgangssprache' quite closely. Such structures allowed a certain compactness in the expression of related concepts and would help the hearer to follow the train of thought of the speaker.

activation of inferential processes across the clauses. Parataxis does not necessarily hinder such processes; however, asyndetic parataxis possibly has an advantage over polysyndetic parataxis in this connection. Namely, whereas subordinating conjunctions actively trigger inferential processes, coordinating conjunctions (especially adversatives) seem to inhibit the construction of inferences across sentences, and asyndetic sequences are virtually neutral in this respect (cf. Caron et al. 1988).

As far as sentence processing is concerned, the integration of subordinate clauses in the syntactic structure of the superordinate (or matrix) clause seems to work in an analogous way to that of other constituents. Just as is the case with word order, the linear order of the clauses in the sentence can affect the integration process. Each subordinate clause can be embedded into the structure of the matrix clause in three positions (all definitions from Karlsson 2007: 367):

- initial: the subordinate clause occurs either before all words of its superordinate clause or directly after the initial subordinator or coordinator of its superordinate clause (e.g. '*if I were you* . . .'; in a sentence like '*if, as people say,* . . .' the as-clause will be considered initial-embedded);
- central ('endotaxis', cf. Nir and Berman 2010: 751): the subordinate clause has words of the superordinate clause both to its left and to its right (e.g. '*the man <u>you saw in the garden</u> was my uncle*'; syntactically independent clauses can also be centre-embedded, as we shall see);
- final: the subordinate clause occurs after the last word of the superordinate clause (e.g. '*John thought <u>that she would call him</u>*').

The tendency for some types of clause to occur in final position (e.g. purpose clauses in Classical Greek, which tend to follow the superordinate clause; cf. Dik 1995: 8) is often described as an example of diagrammatic iconicity—the semiotic phenomenon by which the relationship between linguistic signs mirrors the relationship between their referents (see Nänny and Fischer 2006). If such signs are clauses, their order and syntactic hierarchy may reflect both the temporal sequence of the events that they describe (see De Cuypere 2008: 165–7) and the speaker's subjective construal of the events as

semantically related (e.g. as being in a cause–effect relationship) and hierarchically organized (cf. Müller 2000: 307). In general, iconicity is a common feature in natural language (see for instance Simone 1995, Askedal 1995: 19, and Haiman 2006). Many studies have found that iconicity is generally assumed by receivers in language comprehension: by default, the events are assumed to be presented in the same order as they occurred, unless other specific information is provided (see Ji 2010 for a review). However, as far as sentence processing is concerned, no specific effect of iconicity has been detected so far. In particular, research aiming at ascertaining whether iconic structures are easier to process has failed to yield cross-linguistically valid results (see Cooper and Klouda 1995).

The order of clauses in a sentence is a feature of discourse organization and reflects the way in which information is structured (see Buijs 2005 for a study of this phenomenon in Classical Greek), which may directly affect 'content-clarity'. As far as sentence processing is concerned, initial-embedded subordinate clauses immediately raise the expectation for a main clause to occur at some point in the sentence and have an anticipating effect analogous to that of verbal arguments[40] preceding a verb within a clause. Final-embedded subordinate clauses have no such anticipating effect, and their reading times are similar to those of coordinate clauses. In general, initial-embedded subordinate clauses are read faster than initial matrix clauses, whereas the reading times for the following clause (which would be a superordinate clause in the former case and a subordinate or coordinate clause in the latter) do not differ (Rummer et al. 2003). Moreover, the same processing advantage can be assumed for subordinate clauses that are anticipated by some elements in the matrix clause or that occur much more frequently in final position. Such is the case with subject infinitive clauses, which are normally anticipated by impersonal verbs, whereas verbs of saying or perception anticipate object and declarative clauses and *verba timendi* complement

[40] Arguments are structurally obligatory complements of a verb, noun, or adjective. For instance, in a sentence like '*John bought a car in Oxford*', both '*John*' (the subject) and '*a car*' (the direct object) are arguments of '*bought*', since if either is omitted, the resulting sentence will be ungrammatical. Conversely, if '*in Oxford*' is omitted, the sentence will still be grammatical; therefore, '*in Oxford*' is not an obligatory complement (an argument) but a dispensable one (an adjunct).

clauses. Likewise, indirect questions are often anticipated by the superordinate verb.

In short, subordination is not a hindering factor to comprehension per se. A subset of subordinate structures to be examined separately is that of non-finite adverbial or complement clauses, which represent one of the most typical features of Classical Greek. At first sight, non-finite verbs can be assumed to be more demanding than finite verbs in language processing, in that they provide less syntactic and semantic information. Namely, non-finite adverbial clauses 'do not specify in which way they modify the state of affairs expressed in the main clause' (Kortmann 2001: 164), which is a source of difficulty for students translating Greek participles, for example. This is not always the case: participles and infinitives can be substantivized by means of an article or can be introduced by subordinators. This helps to clarify their syntax and semantics. In general, the 'incompleteness' and grammatical underspecification of non-finite verbs makes them easier to produce than finite verbs: as a matter of fact, agrammatic and aphasic patients use them much more extensively than do individuals with no language deficits. This does not apply to the same degree to patients who speak null-subject languages, that is, languages that allow the omission of a pronominal subject (null-subject languages are a subclass of pro-drop languages—languages where pronouns may be omitted when pragmatically inferable, regardless of their syntactic function). Since such patients do not need to produce an overt subject, they can avail themselves of more cognitive resources, which they employ to conjugate a finite verb (Bastiaanse 2011). Young children also tend to use non-finite verbs instead of finite forms (de Roo 2001, de Roo et al. 2003, Leonard et al. 2002). In particular, children acquiring French and the Germanic languages tend to use the infinitive (in the so called 'optional infinitive' stage). Greek children use the perfective stem with a third person singular ending (for instance, *διαβάσει*, from *διαβάζω*), which normally appears as an invariable form in the periphrastic tenses (for instance, *έχω διαβάσει* 'I have read'). Italian children use the past participle, although the infinitive is occasionally found. Optional infinitives are also produced by Spanish children, together with bare stems (Hyams 2005, Guasti 1993, Grinstead et al. 2009). Children acquiring null-subject languages tend to learn to conjugate finite forms earlier than children acquiring 'optional infinitive' languages. When it comes to

comprehension, it seems that overt morphological information does not support understanding in off-line comprehension tasks, where, as we have seen, production is involved. This applies to children acquiring both types of language. An on-line comprehension experiment, however, showed that even children learning an 'optional infinitive' language like German can make use of the information provided by finite verbs, which are hard to produce but not to understand (Brandt-Kobele and Höhle 2010). As a matter of fact, young Italian children can recognize person morphemes in spontaneous conversation with their parents (Guasti 1993: 29, n. 17). Both Spanish and Italian children are able to use non-finite verbs appropriately and to distinguish between finite and non-finite forms. To sum up, non-finite verbs are cognitively simpler to produce than finite verbs. In turn, finite verbs are not harder to understand than non-finite verbs, but nothing seems to indicate that they are easier. As a consequence, we can consider the distinction between finite and non-finite verbs as ultimately irrelevant for the purposes of this study.

Centre-embedded clauses, which, from a syntactic point of view, can be either subordinate or independent (parentheses, or 'appositional' clauses),[41] raise specific problems. As we have seen, in the *Rhetoric* (1407b21–5) Aristotle finds fault with a sentence like *ἐγὼ μέν, ἐπεί μοι εἶπεν (ἦλθε γὰρ Κλέων δεόμενός τε καὶ ἀξιῶν), ἐπορευόμην παραλαβὼν αὐτούς* (example 21 above). Too many unexpected connectives (*ἐπεί, γάρ, τε, καί*) occur before the main verb (*ἐπορευόμην*), and the long distance between initial *ἐγώ* and the *ἐπορευόμην* makes the sentence unclear (*ἐὰν δὲ πολὺ τὸ μεταξὺ γένηται τοῦ ἐπορευόμην, ἀσαφές*)—which may be read as evidence for the perception of a locality effect. The structure of this sentence can be analysed as shown in the diagram below. The figures in brackets and the amount of indentation correspond to the depth of each clause. This is defined as the hierarchical level of a clause

[41] Appositional clauses are independent clauses in an asymmetric paratactic relationship to the clause they follow. Since they are not integrated in the syntactic representation of such clauses, they cannot be regarded as subordinate clauses. However, they can be understood only in relation to another clause: see Nir and Berman 2010: 750.

relative to the main clause, which is always at depth zero (Karlsson 2007: 367–8).

ἐγὼ μέν	Main clause, beginning (0)
ἐπεί μοι εἶπεν	Centre-embedded clause (1)
ἦλθε γὰρ Κλέων δεόμενός τε καὶ ἀξιῶν	Final-embedded appositional clause[42] (1)
ἐπορευόμην παραλαβὼν αὐτούς.	Main clause, end (0)

Right after the initial pronoun, which marks the beginning of the main clause, a centre-embedded subordinate clause starts. Centre-embedding has been an important field of investigation for research on language comprehension, and in general, as a potential source of difficulty (cf. Gibson 2000: 96, Warren and Gibson 2002: 79–80, Chen et al. 2005: 144, Nakatani and Gibson 2010: 94). Difficulties related to centre-embedding are mainly due to interference effects (the embedded clause can contain constituents that may compete with constituents of the matrix clause in the assignment of semantic roles—agent, patient, recipient, etc.—thereto; see Van Dyke 2007). On-line comprehension difficulties have been explained as the result of increases in 'storage cost' (Gibson 2000: 114–15, Chen et al. 2005) instead. According to the storage cost hypothesis (a memory-based account), as each word is encountered, it may raise the expectation for a syntactic head: an adjective would predict a noun, a noun would predict a verb, a subordinator would predict a verb, and so on. The more expectations are left pending at a given point, the longer should be the predicted processing time at that point. As a consequence, words appearing at the beginning of a sentence should be more likely to be harder to process than words occurring at the end, where most expectations should be already satisfied. This theory is somewhat complementary to the surprisal hypothesis (Nakatani and Gibson 2010: 107), according to which it is more likely that words appearing late in the sentence are processed faster, provided that they are predictable enough.

The following table shows the word-by-word storage cost for the sentence presented by Aristotle.

[42] Cf. n. 41.

	ἐγὼ	μὲν	ἐπεὶ	μοι	εἶπεν	ἦλθε	γὰρ	Κλέων	δεόμενός
Predicted head type	V	V	V, V	V, V	V, N	V, N, N	V, N, N	V, N	V, N
Predicted heads	1	1	2	2	2	3	3	2	2

	τε	καὶ	ἀξιῶν	ἐπορευόμην	παραλαβὼν	αὐτούς
Predicted head type	V, N	V, N	V, N	–	N	–
Predicted heads	2	2	2	0	1	0

When the initial personal pronoun is encountered, a verb is anticipated. The expectation for another verb arises when the first subordinator (ἐπεί) is encountered. At this point, since a reader/hearer would not know whether the subject of the subordinate clause is the same as that of the main clause, and Greek is a null-subject language, the expectation for a subject noun phrase arises only as the third-person verb is encountered (εἶπεν). On the other hand, this verb satisfies the expectation set up by ἐπεί. The third-person verb that follows immediately (ἦλθε) shows that an asyndetic appositional clause (a parenthesis) begins. The subject of εἶπεν has not shown up, but nothing suggests that that of ἦλθε should be the same, and expectation may arise for another subject. This expectation is fulfilled by Κλέων. However, only as ἐπορευόμην occurs can we infer that Κλέων must be the subject of εἶπεν, too. Storage cost peaks around the centre-embedded clause and its loosely coordinated appositional clause. If we were able to test this reconstruction experimentally, this analysis would predict that the hardest word to process should be ἦλθε. This would also be plausible from the point of view of an expectation-based account such as the surprisal theory (Levy 2008: 1151), since we can expect that the probability of two non-coordinated finite verbs in the same tense and person occurring immediately after one other should be quite low in Attic.

This analysis (as well as Aristotle's remark) is not too instructive, mainly for two reasons. First, the sentence is taken in isolation. Discourse context would have made it much more straightforward to infer what the subjects of εἶπεν and Κλέων would be, and that they coincide. Secondly, one must remember that difficulties detected in visual on-line comprehension tasks might well not match the situation with auditory presentation. The results predicted by the

analysis attempted here would apply only to visual comprehension. It is a cross-linguistic fact that parentheticals are marked off by prosody in a pretty regular way, and more importantly, this type of prosodic marking is an effective disambiguator for the hearer (see 4.4.1; cf. Shattuck-Hufnagel and Turk 1996: 198–9 and Dik 1989: 380). It is true that long parentheses can induce locality effects even in on-line processing (cf. Dehé and Kavalova 2007: 8), but it is hard to see how the long distance separating *ἐγώ* from *ἐπορευόμην* could have been problematic: as mentioned above, Greek is a null-subject language, and the morphosyntactic information conveyed by the personal pronoun is already encoded in the morphology of *ἐπορευόμην*.

In conclusion, there is no reason to regard centre-embedded structures as intrinsically hard to understand; actually, in some cases parentheses seem to assist on-line processing, owing to their disambiguating function and their prosodic and pragmatic properties (see Kavalova 2007: 167–71, cf. Dehé 2007: 267). On the other hand, they can be regarded as 'hotspots' for potential hindrances to language processing which are connected to other linguistic phenomena. Ambiguities are likely to arise when centre-embedding results in some 'vulnerable' word-order patterns, especially if the verbs of the matrix and the embedded clause have some morphological and semantic features in common. In particular, if the verb of the centre-embedded clause precedes its subject (if overt) and is in the same person and number as that of the matrix clause, then the centre-embedded verb can disrupt the integration of the matrix verb, since it would satisfy at least some of the morphosyntactic expectations raised by the subject of the matrix clause. However, prosody would most often mitigate these effects.

4.3.5 Word order

The facts that Greek word order is greatly affected by pragmatic factors (information structure), rather than merely syntactic constraints (cf. for instance Matić 2003: 573 and Bertrand 2011), and that basic sentence constituents (such as the subject, the verb, and other verbal arguments) do not occur in fixed positions, characterize the relationship between word order and sentence processability in at least two respects. For one thing, in Classical Greek types of syntactic ambiguity exist that would not easily concern a fixed-word-order

language. As we have seen, commonly recognized ambiguities are those of infinitival clauses in which it is not clear whether a verbal argument in the accusative is the subject or the direct object of a transitive infinitive, or those of copulative constructions in which it is not clear whether a noun in the nominative is the subject or the predicate (examples 9–13); arguably, such ambiguities would not arise in languages in which the subject or the predicate/direct object normally occur in fixed positions relative to the verb. For another thing, the functional principles governing word order in Classical Greek may frequently result in syntactically discontinuous constructions, in which elements that belong together from a syntactic point of view are separated in the linear order of the sentence. As we have seen, a linguistic phenomenon of this kind—hyperbaton—is often regarded by the ancient rhetoricians as a potential source of difficulty. Devine and Stephens (2006: 523), who describe the syntax of Classical Greek in terms of constituency,[43] define hyperbaton as the extraposition of a constituent from the phrase to which it belongs. For instance, in a sentence like *μήποτε τὸν κακὸν ἄνδρα φίλον ποιεῖσθαι ἑταῖρον* (Thgn. 1.113), the adjective *φίλον* and the noun *ἑταῖρον* constitute a noun phrase (the noun is the head of the phrase and the adjective is its modifier), but in the linear order of the sentence as it appears in the text of Theognis, the two constituent elements of this phrase are separated by the verb *ποιεῖσθαι*; this is interpreted as the result of the extraposition of the modifier *φίλον*.

In terms of syntactic dependency (cf. Appendix A.1), hyperbaton can be defined as a sequence of two elements, one of which (head) syntactically governs the other (modifier), that are separated by one or more intervening elements. At least one of the intervening elements must be either (directly or indirectly) superordinate to, or a sister of (that is, at the same hierarchical level as), the head of the hyperbaton. These patterns are visualized in the diagrams in Figure 4.2. Following Devine and Stephens (2000), the elements are labelled according to their position in the hyperbaton. The element in the first position is labelled Y_1, the intervening one is labelled X, and the final one is labelled Y_2.

In these dependency graphs, the dependencies are represented visually as arcs which connect each element to the element which it governs. The direction of the dependency is shown by an arrow

[43] In Devine and Stephens 2000.

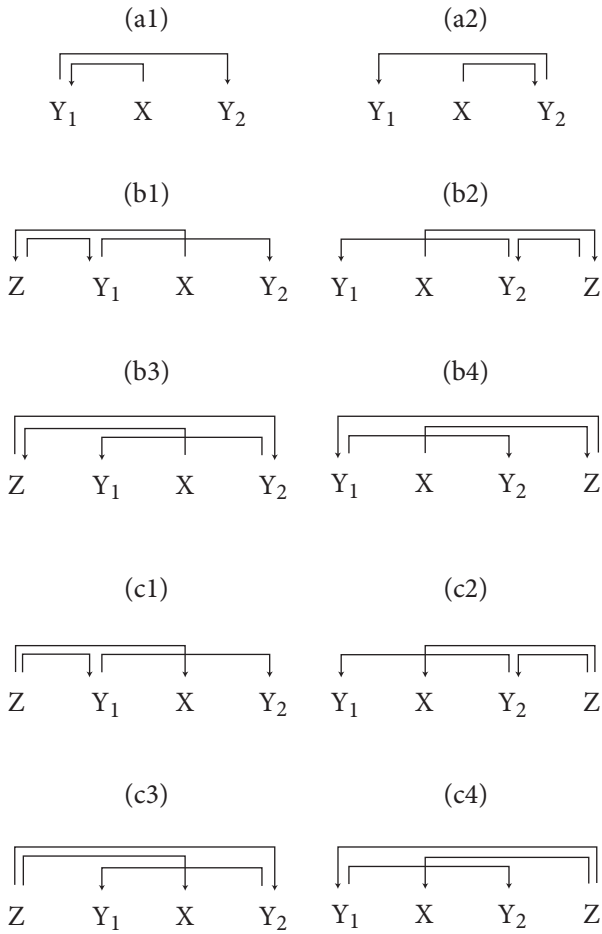

Figure 4.2. Hyperbaton patterns.

(governor → satellite, cf. Appendix A.1). Arcs must be traced in such a way so as to minimize the crossings between one another (as in Mel'čuk 1988). Diagrams (a1) and (a2) of Figure 4.2 represent patterns with X as the direct governor of the head of the hyperbaton. In diagrams (b1–4), X governs an element Z that governs the head of the hyperbaton, which means that X is superordinate to the head of the hyperbaton, but it is not its direct governor. The latter can precede or follow the hyperbaton. In diagrams (c1–4), both X and the head of the hyperbaton are governed by an element Z which can precede or

follow the hyperbaton (X and the head of the hyperbaton are sister nodes in the hierarchy).

Hyperbaton is commonly understood as a syntactic discontinuity determined by the information-structural function of at least one of the elements of which it consists—in other words, by a functional definition, hyperbaton results from the 'displacement' of an element ($Y_{1/2}$) in the linearization of the sentence justified by its pragmatic function (see for instance Devine and Stephens 2000, Bertrand 2011, Agbayani et al. 2011). The definition of hyperbaton presented here, instead, is purely descriptive of the syntactic phenomenon and is not concerned with the factors that cause it. As such, it captures cases of hyperbaton in which the syntactic discontinuity may be ascribed to other reasons than the pragmatic status of Y_1 and/or Y_2; in particular, it may happen that the discontinuity may rather be interpreted as resulting from the 'displacement' of the intervening element (X). From a functional perspective, the hyperbaton resulting from the 'displacement' of X would be a mere epiphenomenon.[44]

Hyperbaton is one of the most frequent types of syntactic discontinuity in Classical Greek. Apart from Greek, hyperbaton is very common in Latin and is well attested in modern languages—including Modern Greek, French, and many Germanic (German, Dutch, Swedish, Norwegian) and Slavic languages (Russian, Polish, Serbo-Croatian)—especially in colloquial registers (see Mathieu 2004, cf. Fraenkel 1928: 165, Devine and Stephens 2000: 7–8, Levy 2005: 14 and Huck and Ojeda 1987), as the following examples show (from Mathieu 2004):

(j) *Το* *κόκκινο* *αγόρασε* *φόρεμα*
The red s/he-bought dress.
(Modern Greek) 'S/he bought the red dress' (as opposed to one of another colour; such constructions are allowed with an intonational emphasis on the element which has contrastive focus—here, the adjective *κόκκινο* 'red').

(k) *Combien* *as-tu* *lu* *de* *livres*?
How-many have-you read of books?
(French) 'How many books have you read?'

[44] I owe this observation to a suggestion of Nicolas Bertrand (private communication).

(l) *Was* *sucht* *er* *für* *ein* *Werkzeug?*
What searches he for a tool?
(German) 'What kind of tool is he looking for?'

As hinted above, it is commonly observed that the main function of hyperbaton is that of highlighting certain elements by anticipating them in the linear order of the sentence. The marked element precedes the phrase it belongs to as a consequence of having informational focus (the element constitutes the 'relevant new information' conveyed by the linguistic expression; see Dik 1995: 6–7, Mathieu 2004: 293–4, and Devine and Stephens 2000: 35; see Hengeveld and Mackenzie 2008: 89 on the notion of focus). It has also been pointed out that hyperbaton in Classical Greek often rounds off syntactic units in both poetry and prose, and that it should be regarded as a resource for oral composition that was also exploited in writing as a discourse structuring device (Marković 2006).

In general, syntactic discontinuities are not intrinsically hard to process. As we have seen, the effects of anticipation and agreement tend to prevail over those of locality in free-word-order languages: if distances between elements in a dependency relationship are not 'unsuitably large' in the linear order of the sentence, they are not a problem (Levy 2005: 142). However, even in free-word-order languages, sentences have a strong tendency to remain what is called 'projective'. A sentence is projective if and only if no dependencies cross each other and no dependencies extend over the top node in the dependency structure. In English, for example, a sentence like '*John loves Mary*' is projective (Figure 4.3), whereas one like '*Mary has a better salary than John*' is not, in that the dependency between '*better*' and '*than*' crosses those between '*has*' and '*salary*' and between '*salary*' and its article '*a*' (Figure 4.4, cf. Mel'čuk 1988: 37).

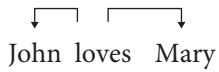

Figure 4.3. Dependency graph of '*John loves Mary*'.

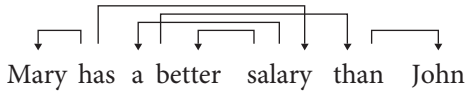

Figure 4.4. Dependency graph of '*Mary has a better salary than John*'.

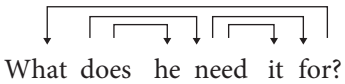

Figure 4.5. Dependency graph of '*What does he need it for?*'

The sentence '*What does he need it for?*' is also non-projective (Figure 4.5), in that the dependency between '*for*' and '*what*' extends over the top node of the sentence (the verb '*does*'; cf. Appendix A.2).

Non-projective sentences exist in many languages, and are obligatory in some cases (as in '*Mary has a better salary than John*' as opposed to *'*Mary has a salary better than John*'; cf. Mel'čuk 1988: 36–8 and 2009: 86–7). As experimental evidence reveals, they are not intrinsically difficult to process (Levy et al. 2012). If appropriate anticipation-inducing contexts are given, crossing dependencies have been shown to be as easily processable as projective dependencies. Their rarity in some languages seems to be due to the locality and interference effects they are very likely to induce. As I mentioned before, this is considered a significant constraint on linguistic production. If such structures are hard to produce, at least in some languages, they will not be produced often, and their potential comprehension difficulty will stem only from their rarity. In short, from the point of view of language processing, hyperbaton should not normally be difficult per se. As we have seen, the locality-related disadvantage of discontinuities can be overcome by anticipation in free-word-order languages, provided that the intervening elements do not cause interference effects (that is, they should not share morphological, syntactic or semantic properties with the second element of a hyperbaton). Head-final hyperbata (that is, those with the head in the Y_2 position) should be even more advantageous in this respect, since the head will be required by the modifier in the Y_1 position.

Nevertheless, we have seen that the ancient rhetorical tradition regards hyperbaton as a potential source of difficulty. The Greek treatises do not contain examples of difficult hyperbata, but an interesting one is found on the Latin side. Quintilian (*Inst.* 8.2.14) quotes a verse from the *Aeneid* as a case of dreadful *mixtura verborum*:

saxa vocant Itali mediis quae in fluctibus aras

'Rocks in the middle of the waves, which the Italians call the Altars.' (*Aen.* 1.109)

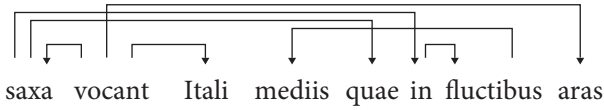

Figure 4.6. Dependency graph of '*saxa vocant Itali mediis quae in fluctibus aras*'.

As the diagram shows (Figure 4.6), in this line of poetry the dependencies between *saxa* and its modifiers *quae* and *in mediis fluctibus* are non-projective. Moreover, a 'double' hyperbaton is engendered by the position of *mediis* before both the governor of its governor (*in*, which governs *fluctibus*) and *quae*, an element at the same hierarchical level as *in* (a sister). One potential source of difficulty is the position of a relative adjective[45] after the noun it modifies, which might be unexpected: in fact, an alternative reading can take *quae* as a relative pronoun introducing a verbless clause. *Mediis* raises the expectation for a noun in the ablative plural. This expectation is reinforced by *in*. The position of *in fluctibus* would lead it to be liable to be parsed either as an element of the would-be relative clause introduced by *quae* or as an adjunct of *vocant*. Moreover, when *vocant* is encountered, it is still ambiguous whether *saxa* is in the nominative or in the accusative: in literary Latin, rocks *can* speak (cf. for instance Cicero, *Arch.* 19: *saxa atque solitudines voci respondent*). When *Itali* is encountered, *saxa* must be reanalysed as the direct object of *vocant*.

Servius' commentary explains this line by reordering the words as *quae saxa in mediis fluctibus Itali aras vocant*. As one can see (Figure 4.7), this arrangement is entirely projective.

Another interpretation of the structure of this verse would make the word order even more 'mixed up' (Figure 4.8). *Saxa* can be interpreted as an anaphoric apposition of *saxa* in the previous line (*in saxa latentia torquet / saxa, etc.*, cf. Verg. *Ecl.* 10.72: *Pierides, uos haec facietis maxima Gallo, / Gallo, cuius amor tantum mihi crescit in horas*). *In mediis fluctibus* would still be a modifier of *saxa* (as if *latentia* were implied), and so would the relative clause *quae vocant*

[45] That is, a relative pronoun used as a modifier of a noun (e.g. '*which*' in the English sentence '*He went home at 4 pm, at which time the traffic was very heavy*').

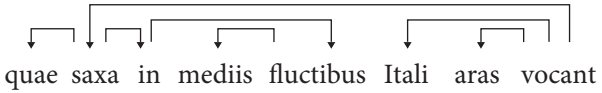

Figure 4.7. Dependency graph of '*quae saxa in mediis fluctibus Itali aras vocant*'.

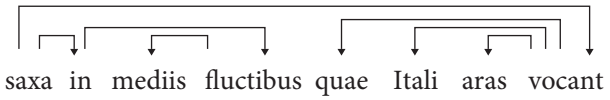

Figure 4.8. Dependency graph of '*saxa in mediis fluctibus quae Itali aras vocant*'.

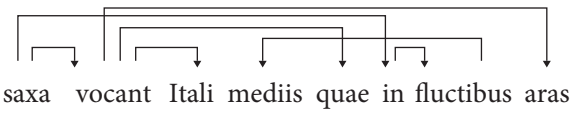

Figure 4.9. Dependency graph of '*saxa vocant Italii mediis quae in fluctibus aras*' (alternative interpretation).

aras (see Appendix A.3). This results in the analysis of the actual word order as shown in Figure 4.9.

If this interpretation were adopted, it would be altogether wrong to consider *saxa* an argument of *vocant*. This wrongly reconstructed dependency would have to be reanalysed upon encountering *quae*. This analysis makes it even more likely that *in mediis fluctibus* could be assigned to the relative clause instead of being interpreted as a modifier of *saxa*.

Either way, it is not surprising that Quintilian did not approve of this word-order pattern. The number of 'false parsings' and reanalyses that it would induce fully justifies his impression. In conclusion, hyperbata should be considered difficult only if the syntactic discontinuity they entail induces hearers to build wrong analyses of partially input structures.

4.3.6 Vocabulary

As we have seen (4.2), virtually all Ancient Greek rhetoricians recognize the importance of vocabulary as a factor that contributes to *sapheneia* and recommend using common words in their proper

sense. Unusual, obsolete, and foreign words, as well as neologisms and compounds, are to be used sparingly and skilfully, and are more at home in the grand than in the plain style.

It is well established in experimental psycholinguistics that high-frequency words are recognized faster than low-frequency words. However, this process is influenced by the context a word belongs to, especially in auditory word recognition. As we have seen, in on-line comprehension, words set up expectations for others to follow: as it were, they generate sets of 'lexical candidates'. As a consequence, rare words that are plausible in a context are easier to process than frequent words that do not belong there (Staub 2011: 428). Implausible frequent words are easier to process than implausible rare words, but there is no difference between rare and frequent words as long as they are equally predictable (Roland et al. 2012: 275). Both the frequency of words and their predictability should be assessed against a corpus of natural language, something which we hopelessly lack for Attic. We do have a few lists of unusual words, but only a small number of them are contemporary to the period studied in this book (for instance, Arist. *Rh.* 1406a5–9, Lys. 10.16–19, D. 23.22, cf. Theo *Prog.* 81.18–25 and 130.25–30 Patillon). Later lists are unreliable for our purposes: Dionysius of Halicarnassus, for instance, calls some unusual words 'antiquated' (*ἀπηρχαιωμένα*, *Amm.* 2 3), but one may well doubt whether a fourth-century Athenian would have had the same impression. As Shipp (1979: 1) remarks, 'words have been misnamed "poetic" merely because of their rarity in Attic prose or absence from it', but the Attic literary texts cannot be taken as a representative and balanced corpus of natural Attic. Technical terms were probably not used by non-specialist native speakers, but they could well have been commonly comprehensible. As Willi (2003: 60) points out: 'because Greek, unlike most modern languages, did not develop its technical vocabulary with the help of foreign morphological and lexical material, almost all technical terms must have been analysable by native speakers'. Even though we are able to identify items belonging to various technical vocabularies in Attic, it would be very hard to guess to what extent the average Athenian was exposed to each of them (cf. also Dover 1997: 114) and—the crux of the matter—to define a socio-linguistically average Athenian. As a consequence, it does not seem possible to evaluate word frequency and predictability in Attic in any thorough and meaningful way.

4.4 PARALINGUISTIC AND NON-LINGUISTIC ELEMENTS

4.4.1 Prosody

Across languages, prosody is a powerful disambiguator (see Carlson 2009 and Wagner and Watson 2010 for useful reviews), and this was certainly the case for Classical Greek as well—as we have seen (4.2), the disambiguating power of prosody was already recognized by Aristotle. Prosodic boundaries and intonation have a direct effect on how linguistic material is stored in working memory. This influences how words are grouped together and ultimately guides syntactic parsing (the literature on this subject is very rich; see for instance Nespor and Vogel 2007: 249–50, Schepman and Rodway 2000, Watson and Gibson 2005, Carlson et al. 2009, Bögels et al. 2010, Langus et al. 2012, Fougeron 2006, cf. Weber et al. 2006, Snedeker and Trueswell 2003). However, the prosodic 'groups' (constituents) in a sentence and their hierarchy do not correspond in a strict one-to-one fashion to syntactic constituents and hierarchy: prosody and syntax are not isomorphic. Not all syntactic elements correspond to prosodic elements, and different prosodic realizations can correspond to one and the same syntactic structure (cf. for instance Nespor and Vogel 2007: 254–5). Syntax certainly constrains the prosodic choices that a speaker can make but does not predict all the prosodic features of the utterance. These are also influenced by the information-structural properties of sentences and discourse, as well as constraints specific to prosody itself (see for instance Bocci 2008, Büring 2013, Samek-Lodovici 2005, cf. Dik 1989: 379–99 on the relationship between pragmatic functions and prosodic contours). Elements having focus, for instance, are commonly highlighted prosodically (cf. Wagner and Watson 2010: 928–31)—this involves different phonetic devices (stress, pitch, lengthening, etc.) in different languages—even though, in some languages, this highlighting is particularly weak and is supported by the addition of specific morphological markers (see Downing 2006). In a free-word order-language like Georgian, only sentence-initial focus elements are given prosodic prominence (Skopeteas et al. 2009: 105).

The acoustic correlates of prosodic boundaries include lengthening, pauses, and changes in pitch and intensity (see Wagner and Watson 2010: 907–10). These often occur in combination with each

other; for instance, prosodic boundaries may consist of pauses accompanied by a boundary tone, abrupt changes in pitch, or transitions from one pitch contour to another. The phonetic reality of high-level prosodic boundaries appears to be universal: the beginning and the end of utterances are marked by silence in every language. Lower-level prosodic boundaries, such as those between words, are realized in ways specific to individual languages. For the purposes of this study, it is not necessary to reconstruct the exact phonetic appearance of such boundaries in Classical Greek—as Ronnet (1971: 43–9), for instance, tried to do as he talked about 'rising' and 'falling' accentuation of hyperbata in Demosthenes. The prosodic system of a language can be acquired independently from the language itself: it is possible to learn to recognize the prosodic units of any language without knowing that language at all and regardless of how different it is from one's own language (Endress and Hauser 2010). An experiment (Langus et al. 2012) showed that participants could reconstruct the syntactic structure of utterances in a non-existent language even when the prosodic system was not consistent with that of their native language. This supports the idea that what matters in the discussion of a dead language is that the function and effect of prosodic boundaries are universal (cf. Li et al. 2011 on the effects of clause and internal prosodic boundaries in Chinese, for instance). The actual phonetics of prosodic boundaries may be different in different languages, but what is important is that their perceived 'strength' guides syntactic parsing in the same way, regardless of what their exact acoustic correlates are. This 'strength' is related to the hierarchical level of the prosodic constituents which they identify. Price and colleagues (1991: 2962) devised a system of seven break indices expressing 'the degree of decoupling perceived between each pair of words' (see Table 4.1).

Boundaries between phonological phrases may resolve syntactic ambiguities deriving from homophonous words which belong to different word classes and different syntactic constituents, as in the French sequences *les pommes dures* ('the hard apples') and *les pommes durent* ('the apples last'). The adjective *dures* ('hard') and the verb *durent* ('last', third person plural) are pronounced in exactly the same way (/dyʁ/), but the insertion of a prosodic boundary after *pommes* marks the end of the noun phrase. If a prosodic boundary were not inserted, the phonetic sequence /dyʁ/ would be interpreted as an adjective and as part of the noun phrase (see Millotte et al. 2007). Stronger breaks may mark that syntactic attachment to the

Table 4.1. Break indices for prosodic boundaries (from McGillivray and Vatri 2015: 122, after Price et al. 1991)

Index		Equivalent perceived boundary
0		boundary within a clitic group*
1		normal word boundary
2		boundary marking a minor group of words
3		intermediate phrase boundary (= phonological phrase)
4	*major boundaries*	intonational phrase boundary
5		boundary marking a grouping of intonational phrases
6		sentence boundary

* This is a controversial notion; the prosodic integration of clitics and hosts may vary greatly across languages (see Goldstein 2010: 39 and 43–7).

elements preceding them is no longer to be expected (Watson and Gibson 2005); as such, these breaks may disambiguate the attachment of a syntactic constituent to what precedes it (left attachment) or to what follows it (right attachment). Indeed, left/right attachment ambiguities are consistently and reliably resolved by prosody (see Price et al. 1991: 2964, cf. Shattuck-Hufnagel and Turk 1996: 198–9 and Wagner and Watson 2010: 917). Many of the ambiguities discussed by the Greek rhetoricians are connected to word-order patterns of this kind (examples 2, 4–8). In on-line, incremental parsing, the ambiguous constituents would be immediately attached to their left:

οἱ δὲ καὶ ἀχνύμενοί περ → ἐπ᾽ αὐτῷ ἡδὺ γέλασσαν.

'But in spite of being in grief about him, they laughed with pleasure.'

στασιάσαντες δὲ ἐν ἀλλήλοις ἔτη πολλά, ὡς λέγεται, → ἀπὸ πολέμου τινὸς τῶν προσοίκων βαρβάρων ἐφθάρησαν.

'Having been at odds with each other for many years, as they say, by reason of some war with the neighbouring barbarians, they were destroyed.'

ὁ νικήσας ἐν πολέμῳ στρατηγὸς ἀνατιθέτω τοῦ Ἄρεως ἄγαλμα → χρυσοῦν ἔχον δόρυ.

'The general who won at war shall dedicate a golden statue of Ares holding a spear.'

τοῦ λόγου τουδ᾽ ἐόντος → ἀεὶ ἀξύνετοι ἄνθρωποι γίγνονται.

'Of this reason that always exists, men are ignorant.'

ὁ ψευδομαρτυρῶν ἁλοὺς → τρὶς χιλίας διδότω.

'The false witness taken three times must give a thousand [drachmae].'

αἶψα δὲ θνήτ᾽ ἐφύοντο τὰ πρὶν μάθον ἀθάνατ᾽ εἶναι ζωρά τε → πρὶν κέκρητο.

'Suddenly mortal became things that previously knew immortality, and things that were previously pure had been commingled.'

This attachment may be prevented by the insertion of a prosodic boundary (indicated by a vertical bar) separating the new constituent from the preceding material:

οἱ δὲ καὶ ἀχνύμενοί περ | ἐπ᾽ αὐτῷ ἡδὺ γέλασσαν.

'But in spite of being in grief, they laughed with pleasure at him.'

στασιάσαντες δὲ ἐν ἀλλήλοις ἔτη πολλά, ὡς λέγεται, | ἀπὸ πολέμου τινὸς τῶν προσοίκων βαρβάρων ἐφθάρησαν.

'Having been at odds with each other for many years, as they say, they were destroyed by reason of some war with the neighbouring barbarians.'

ὁ νικήσας ἐν πολέμῳ στρατηγὸς ἀνατιθέτω τοῦ Ἄρεως ἄγαλμα | χρυσοῦν ἔχον δόρυ.

'The general who won at war shall dedicate a statue of Ares holding a golden spear.'

τοῦ λόγου τοῦδ᾽ ἐόντος | ἀεὶ ἀξύνετοι ἄνθρωποι γίγνονται.

'Of this reason that exists men are always ignorant.'

ὁ ψευδομαρτυρῶν ἁλοὺς | τρὶς χιλίας διδότω.

'The false witness, once taken, must give three thousand [drachmae].'

αἶψα δὲ θνήτ᾽ ἐφύοντο τὰ πρὶν μάθον ἀθάνατ᾽ εἶναι ζωρά τε | πρὶν κέκρητο.

'Suddenly mortal became things that previously knew immortality, and pure things had previously been commingled.'

In another rhetorical example (1), ambiguity derives from the potential parenthetical interpretation of the sequence *δοῦλον ὄντ(α)* in the sentence *ἐγὼ σ᾽ ἔθηκα δοῦλον ὄντ᾽ ἐλεύθερον*. If *δοῦλον* is immediately attached to its left (*ἔθηκα*), the sentence will mean 'I made you, who were a free man, a slave.' A parenthetical reading (*ἐγὼ σ᾽ ἔθηκα | δοῦλον ὄντ᾽ | ἐλεύθερον*) would give the meaning 'I made you, who were a slave, free.' As experimental data show, an unwanted parenthetical interpretation can easily be avoided (non-parenthetical

prosody is interpreted as marking a parenthesis only 4 per cent of the time). Accordingly, parenthetical prosody is very effective at inducing a parenthetical interpretation of a sequence of words (cf. Shattuck-Hufnagel and Turk 1996: 199, Price et al. 1991: 2963; cf. 4.3.4).

The appropriate insertion of prosodic boundaries also produces a bias towards the intended interpretation of sentences that are ambiguous about the near or far syntactic attachment of a constituent. In a sentence like '*touch the branch with a flower*', for instance, the prepositional phrase '*with a flower*' can be interpreted either as an instrument (an adjunct of the verb, far attachment) or as a feature of the branch (a modifier of the noun, near attachment). In such contexts, a boundary occurring before the phrase to be attached biases listeners towards far attachment—in this case, towards the interpretation '*touch with a flower*' (cf. Carlson 2009: 1192–3, Wagner and Watson 2010: 918). Snedeker and Trueswell (2003, experiment 1) found that listeners correctly parse ambiguous sentences of this kind, uttered with appropriate prosodic phrasing, 70 per cent of the time, as opposed to the about 95 per cent score of unambiguous sentences. The participants in another experiment (Kraljic and Brennan 2005, experiment 3) did better in a similar task (83 per cent correctness as opposed to near perfection with unambiguous sentences).

As we have seen (example 14), Pseudo-Hermogenes reports that certain readers regarded the Homeric sentence *θεοῖσι δὲ θῦσαι ἀνώγει Πάτροκλον ὃν ἑταῖρον* ('he commands to sacrifice to the gods Patroclus, his companion', *Il.* 9.219–20) as ambiguous because the noun *Πάτροκλον* may be interpreted as the either object of *θῦσαι* or as an argument of *ἀνώγει*, a verb of command (see Appendix A.4). Apart from the intrinsic semantic plausibility of an entity like 'Patroclus' being the object of a verb meaning 'to sacrifice' compared to that of other potential sacrificial victims (as I mentioned, certain discourse contexts could favour this interpretation), it is unlikely that a native speaker of Greek would have found this sentence ambiguous upon listening in the absence of a prosodic break indicating far attachment. It is true that a major metrical boundary (line break) occurs precisely in the sensitive position (between *ἀνώγει* and *Πάτροκλον*), but it is not to be taken for granted that metrical boundaries always correspond to prosodic boundaries (especially if one takes into account the possibility of enjambement)—this is a very complex question which will not be addressed here (cf. McGillivray and Vatri 2015: 112).

A potentially related phenomenon is that of the high or low attachment of relative clauses whose relative pronoun may refer to more than one potential antecedent in the superordinate clause (a widely studied problem; I refer to Hemforth et al. 2015 as a source for the whole discussion and for further references). This type of ambiguity was singled out by Theon (*Prog.* 82.13–18, example 3):

> *δῆμον Ἐρεχθῆος μεγαλήτορος, ὅν ποτ' Ἀθήνη θρέψε Διὸς θυγάτηρ, τέκε δὲ ζείδωρος ἄρουρα.*
>
> 'People of great-hearted Erechtheus, whom once Athena, daughter of Zeus, nourished, and the corn-bearing earth generated.'

Here, the relative pronoun *ὅν* may refer to either *δῆμον* (high attachment) or *Ἐρεχθῆος* (which depends on *δῆμον*, low attachment); if we assumed a locality principle in the integration of new constituents as a sentence is processed, the latter option should be the preferential one, since the relative pronoun is closer to *Ἐρεχθῆος* than to *δῆμον*. However, Theon points out that the opposite interpretation is also possible. Now, in a number of languages (e.g. Spanish), the attachment of relative clauses to a high antecedent rather than a nearer low one seems to be preferred by native speakers in off-line comprehension tasks, which contradicts the locality principle of preference for recency in the integration of new material. Results of comprehension experiments of this kind show a high degree of variability both across and within languages; high attachment in off-line interpretation ranges between about 30 per cent and 60 per cent of the time, with higher scores for long relative clauses than for short ones and a detectable effect of the information-structural properties of the antecedent (elements with focus tend to attract the attachment of relative clauses). Ongoing research seems to indicate that overt prosodic breaks before the relative clause induce high attachment even in a language like English, for which low attachment seems preferential (Zahn and Scheepers forthcoming). On this account, Theon's observation on the line of Homer discussed above may reflect written textual practices and may well be based on an off-line 'ambiguity hunt'—after all, similar patterns of high-attached relative clauses are not rare in Classical Greek (e.g. Hdt. 1.18: *τὰ δὲ πέντε τῶν ἐτέων* [. . .] *Ἀλυάττης ὁ Σαδυάττεω ἐπολέμεε, ὃς παραδεξάμενος, ὡς καὶ πρότερον μοι δεδήλωται, παρὰ τοῦ πατρὸς τὸν πόλεμον προσεῖχε ἐντεταμένως* 'For five of those years Alyattes son of Sadyattes waged the war, who

[Alyattes], having inherited the war from his father, as described above, devoted himself to it vigorously').

An explanation for this phenomenon has been sought in the hypothesis that long relative clauses induce a preference for high attachment because of a balancing principle: long constituents prefer to attach to constituents of the same 'weight' (see Hwang and Steinhauer 2011 for a summary, cf. Hemforth et al. 2015: 54). This has been interpreted as a prosodic phenomenon—prosodically long phrases would tend to attach to prosodically long phrases (according to a different hypothesis, far attachment is preferred as a consequence of the proximity of the antecedent to the predicate—see Roberts 2013: 231—but this would apply to verb-medial languages). Now, in languages in which noun heads normally precede constituents or phrases that modify them, the high attachment of a relative clause automatically corresponds to far attachment, in that the syntactically higher constituent to which the relative clause may be attached would be more distant from the relative pronoun than the lower one which it governs. In a free-word-order language like Classical Greek relative clauses may attach to far constituents that are not higher in the syntactic hierarchy than near ones, as in the following sentence of Lysias (1.49):

> *πολὺ γὰρ οὕτω δικαιότερον ἢ ὑπὸ τῶν νόμων τοὺς πολίτας ἐνεδρεύεσθαι, οἳ κελεύουσι μέν, ἐάν τις μοιχὸν λάβῃ, ὅ τι ἂν οὖν βούληται χρῆσθαι, οἱ δ' ἀγῶνες δεινότεροι τοῖς ἀδικουμένοις καθεστήκασιν ἢ τοῖς παρὰ τοὺς νόμους τὰς ἀλλοτρίας καταισχύνουσι γυναῖκας.*
>
> 'This would be more just than to let the citizens be trapped by laws, which on the one hand command that one, if he catches an adulterer, may treat him as he pleases, while on the other hand the trials are more dangerous for the victims than for those who, against the law, dishonour other people's wives.'

On a recency-first account, the masculine accusative plural noun *πολίτας* (near attachment) competes with *νόμων* (far, but correct, attachment) as possible antecedent of the relative pronoun *οἵ*. The phrase of which *νόμων* is part expresses the agent of the verb *ἐνεδρεύεσθαι*, whereas *τοὺς πολίτας* is its grammatical subject. From a syntactic point of view, the competing elements are not part of the same noun phrase and are not subordinate to one another. If we believe that prosodic balance is sufficient to bring about a preference for far attachment (a matter of linear distance and phonetic size), the preference for high attachment (a matter of structural

distance and 'syntactic' size) in head-first languages may be simply epiphenomenal—a prosodically long relative clause attaches to a prosodically long phrase, which in head-first languages comprises both the antecedent and its modifier. Another factor that should be taken into account is the potential disambiguating effect of prosodic prominence: there is evidence that in a language like English relative-clause attachment may be attracted by noun phrases pronounced with prosodic emphasis (Jun and Bishop 2015). In the present state of knowledge, we may need to suspend our judgement and simply mark the possibility of an ambiguous interpretation of a pattern such as that in the example from Lysias.

While ambiguities resulting from different possible groupings of syntactic constituents in the sentence are reliably resolved by prosodic boundaries, prosody is no *deus ex machina* capable of resolving other types of ambiguity (cf. Wagner and Watson 2010: 916–19). Homonyms belonging to the same word-class, for instance, are not distinguished prosodically (e.g. Italian *penna* 'feather' or 'pen', cf. Nespor and Vogel 2007: 254, Wagner and Watson 2010: 918). The question whether prosody can help to disambiguate semantic roles of morphologically ambiguous words (as in examples 9–12 in 4.2) is a difficult one. Weber and colleagues (2006) report that, in German, simple sentences where the order of the constituents is subject-verb-object (SVO) are pronounced with an intonation that places prominence on the verb, whereas if the positions of subject and object are inverted (OVS) prominence is placed on the sentence-initial object. This intonational difference leads listeners to expect the corresponding syntactic/semantic pattern as they process such sentences. If the sentence begins with a noun that, from a morphological point of view, may be interpreted as either a nominative or an accusative (e.g. a neuter or a feminine plural in German), SVO intonation induces its interpretation as a nominative, while OVS intonation leads it to be interpreted as an accusative.

In principle, prosody could have played a similar role in Greek sentences such as examples (9) and (10), where obscurity derives from double-accusative constructions; however, it is not clear whether such intonational cues ultimately determine the intonational patterns corresponding to the information-structural features of the sentence. In the sentences used as experimental material by Weber and colleagues, the focus is the group consisting of verb and the object (broad focus, cf. Matić 2003: 582 and Lambrecht 1994: 296–306); in

such cases, West Germanic languages give prominence to the last argument of the verb (Weber et al. 2006: B70, Lambrecht 1994: 300). Since Weber and colleagues used visual cues alongside the textual material in their experiment, the fact that SVO intonation was found to give prominence to the verb might betray a bias in the activation of information determined by such extralinguistic cues (Weber et al. 2006: B71). Moreover, the fact that OVS intonation was found to give prominence to the initial object seems to override this information-structural factor. However, Weber and colleagues report that other intonational cues are associated with the OVS order, but the effect of such cues in disambiguation was not studied in their experiment.

In addition, it is necessary to observe that OVS order is highly marked in German and is generally harder to process than SVO even regardless of potential morpho-semantic ambiguities (Lieven 2014: 17), and that the prosodic 'emphasis' on the object in such sequences may be ascribed to this factor. The same may not be claimed of Classical Greek and, in the absence of discourse or semantic cues (e.g. differences in animacy—which could be associated with agency—between the ambiguous elements), it is likely that double-accusative constructions would be ambiguous by default.

Another question that has been widely debated by linguists and psychologists is whether speakers or oral readers naturally use prosody to resolve syntactic ambiguities. Experimental studies (most notably Allbritton et al. 1996; see Wagner and Watson 2010: 921–3) suggest that speakers only use prosody spontaneously to resolve ambiguities of which they are aware. This is especially the case with reading tasks, which do not faithfully simulate spontaneous production conditions. In interactive tasks, in which participants are required to give listeners instructions using syntactically ambiguous sentences, speakers do seem to produce prosodic cues spontaneously so long as they are attentive, cooperative, motivated, and able to sustain the listeners' comprehension, about which they receive immediate feedback (see Kraljic and Brennan 2005, cf. also Millotte et al. 2007). When speakers remain focused on themselves, they fail to produce disambiguating cues (Snedeker and Trueswell 2003). These observations are particularly relevant for the reconstruction of ancient *anagnosis*. In this connection, it is interesting to remark that prosody is part of the phonological representation created as a sentence is read and thus plays a role in 'inner speech' and

sub-vocalization ('implicit prosody'; see Clifton 2015: 169–72 and Wagner and Watson 2010: 923–5 for reviews; cf. Hwang and Steinhauer 2011 and Hemforth et al. 2015; cf. 2.2). In reading, the reconstruction of prosody interacts with the analysis of syntax. Readers tend to recreate more natural prosody as they proceed, but as it builds up, prosodic information biases subsequent syntactic decisions (Kentner 2012). Unexpected syntactic structures can induce wrong prosodic representations, which clash with the expected natural prosody and result in wrong parsings. Re-examination of such structures requires a change in their prosodic representation, which is assumed to be cognitively demanding (Bader 1998, Frazier et al. 2006: 247). Of course, punctuation can help this process and function as an orthographic equivalent of intonation boundaries (Steinhauer 2003, Hirotani et al. 2006),[46] but readers in classical Athens could not avail themselves of a fully developed punctuation system. Accurate oral rendering of difficult structures is not easily achieved at first sight, and while public speakers would have rehearsed their text anyway (cf. Bers 2009: 50–1), readers would probably have encountered some problems (cf. Roberts 1910: 338). A first-time reader would need a second reading in order to overcome a syntactic difficulty. In this respect, the position of a 'collective' reader addressing a small audience would be similar to that of a public speaker: he would either have to rehearse the text in advance, possibly annotating it, or he would be forced to correct himself—in Allan's (1980: 248) words, 'the preparation of lectures is a form of *πόνος*'.

4.4.2 Gesture

A passage of the *Rhetoric to Alexander* (25.4 1435b11–15) seems to suggest that demonstratives may help to disambiguate the reference of certain nouns in certain cases, but would obfuscate it in others. The example given in the treatise consists of a sentence in which two instances of the same noun are accompanied by the same demonstrative (*οὗτος ὁ ἄνθρωπος/τοῦτον τὸν ἄνθρωπον*). As we have seen

[46] A brilliant demonstration of these effects in English is the first sentence of an abstract by Steinhauer and Friederici (2001): 'Just as the false comma in this sentence, shows punctuation can influence sentence processing considerably.'

(4.2), this puzzling remark may be explained by arguing that the obfuscating effect is a 'written' one, whereas the disambiguating effect requires the use of physical deixis—the actual gesture of pointing at the entities to be disambiguated accompanying the utterance of the ambiguous nouns and demonstrative, which would serve as a 'stage direction' of sorts (see Kibrik 2011: 46–7, 501–21 and Wagner et al. 2014 on the connection between gesture and reference).

Whether or not this interpretation is correct, it is true that ambiguities may arise when the same demonstrative is used to refer to different entities in the same sentence and this change is not explicitly represented in the language. Such changes, however, can be communicated paralinguistically by the speaker by means of physical deixis in a context where the entities referred to are present. This would be the case with this type of ambiguities occurring in forensic speeches—more often than not, persons mentioned in the course of the trial would be present in the courtroom. When they occur in texts composed for *anagnosis*, such ambiguities require interpretation; this would also be necessary prior to group *anagnosis*, which would require the oral reader to use paralinguistic cues and 'act out' changes of referent by means of his body language. In the absence of physical referents to literally point at, speakers could use 'abstract deixis' (or 'virtual pointing'; see Kibrik 2011: 537–46) to guide the listeners of an *anagnosis* to the correct interpretation. In other words, they could point at empty spaces intended to represent the referents (see McNeill et al. 1993). Such gestures are spontaneously produced by speakers both to convey referential information to the addressee and to organize their own cognitive representation of the message, and may be as limited as head movements (cf. Wagner et al. 2014: 214).

Passages in which multiple instances of the same demonstrative point to different referents in the same sentence are occasionally found in Classical Greek (e.g. Hdt. 7.206). Let us consider a sentence from Plato (*Ap*. 19e4–20a2; see. 5.4.8, sentence 69):

> *τούτων γὰρ ἕκαστος, ὦ ἄνδρες, οἷός τ᾽ ἐστὶν ἰὼν εἰς ἑκάστην τῶν πόλεων τοὺς νέους—οἷς ἔξεστι τῶν ἑαυτῶν πολιτῶν προῖκα συνεῖναι ᾧ ἂν βούλωνται—τούτους πείθουσι τὰς ἐκείνων συνουσίας ἀπολιπόντας σφίσιν συνεῖναι χρήματα διδόντας καὶ χάριν προσειδέναι.*

> 'Each of these men [*sc*. the sophists], gentlemen, travelling to each city as much as he can, convinces the young—to whom it is possible to associate for free with whoever they may wish among

their fellow citizens—they convince these to associate with them, having given up the association with those men, for money, and to be grateful besides.'

Here, the first occurrence of *οὗτοι* refers to 'the sophists' (*τούτων*), but the second one refers to 'the young' (*τούτους*). In between, a centre-embedded relative clause appears. In that clause, both *οἷς* and *ἑαυτῶν* refer to 'the young'. More importantly, 'the young' becomes the subject of another relative clause, which is final-embedded into the centre-embedded one. Now, 'the young' is the subject of a third-person-plural verb (*βούλωνται*). *Πείθουσι* is also in the third person plural, which means that this is a case of notional agreement (*ad sensum*), since *ἕκαστος* is in the singular. In this picture, in on-line comprehension native speakers could be confused as to the referent to which *τούτους* points, and at least to some hearers the demonstrative pronoun might have ended up denoting 'the sophists' rather than 'the young'. If this were the case, the latter referent might have been interpreted erroneously as the subject of *πείθουσι*.

Sentences such as this are relatively rare, and it is often the case that multiple instances of the same demonstrative pronoun point to the same referent (e.g. Semon. fr. 7 West 80–2, Th. 2.13.9, or X. *Mem.* 4.2.28). A study of this phenomenon in Antiphon (Vatri 2017) shows that more often than not instances of the same demonstrative[47] occurring without any explicit change of referent in the discourse stretches that separate them consistently point to the same referent both in Antiphon's logographic speeches and in the *Tetralogies*. Multiple *οὗτος*/*οὗτοι*/*αὕτη*/*αὗται* refer consistently to the same person(s), typically the speaker's adversary or adversaries, at 1.2, 1.12, 2.1.11, 2.2.13, 2.3.7, 3.2.10, 3.3.2, 3.4.6, 5.18, 5.25, 5.38, 5.84, 5.94, 6.16, 6.20, 6.21, 6.24, 6.26, 6.31, 6.40, 6.41, 6.43, and 6.44. The same applies to the corresponding forms of *ἐκεῖνος* at 1.3, 3.4.5, 4.3.4, 5.59, 5.61, 5.62–4, and 5.74.

Abrupt changes of referent are found twice in the logographic speeches (5.60, 6.28)—where they could have been disambiguated by gestures in *hypokrisis*—and only once in the *Tetralogies* (2.3.2);

[47] Defined as the forms of *οὗτος*, *ἐκεῖνος*, and *ὅδε* in the same gender and number, or forms of different genders that are not distinguished phonologically; e.g. *οὗτος* would count as a different demonstrative from *οὗτοι* and *αὕτη*, but as the same as *τοῦτον* or neuter *τούτῳ*.

in oral *anagnosis*, abstract deixis could have at least mitigated the ensuing ambiguity.

4.5 READING THE NATIVE MIND

It is not an unknown practice for modern critics to make claims about the difficulty of a passage. Flashar (1969: 29), for instance, describes a 'monster' sentence at Th. 2.42.4 (5.4.12 below, sentence 85) as the 'schwierigsten Satz des thukydideischen Geschichtswerkes'. In order to compare the results of 'traditional' approaches to the question of the 'grammatical' difficulty of Classical Greek sentences (as opposed to the interpretive one) with those of the psycholinguistic approach outlined here, let us analyse three passages described as remarkably obscure in the literature. We may start with a sentence from Gorgias' *Helen* (DK82 B11.7), which Gagarin (1999: 170) calls an 'extreme example' of verb postposition:

> *ἄξιος οὖν ὁ μὲν ἐπιχειρήσας βάρβαρος βάρβαρον ἐπιχείρημα καὶ λόγῳ καὶ νόμῳ καὶ ἔργῳ λόγῳ μὲν αἰτίας, νόμῳ δὲ ἀτιμίας, ἔργῳ δὲ ζημίας τυχεῖν.*
>
> 'Thus, the barbarian who undertook a deed barbarous in word and law and fact deserves to meet with blame in word, loss of rights in law, and punishment in fact.' (transl. M. Gagarin)

Even though the dependency between the initial *ἄξιος* and the final *τυχεῖν* is extremely long, the abundance of intervening arguments makes the verb highly predictable, as Gagarin correctly remarks. He is also right when he points out that 'the three genitives dependent on *tychein* have already been understood because they could be construed with the initial *axios* with little difference in meaning'. This, however, would lower the expectation for the final infinitive. On the other hand, intonation would mark that the sentence does not finish at *ζημίας*, and that at least this genitive depends on *τυχεῖν*, which would end up being interpreted as an argument of *ἄξιος* coordinate to the previous genitives. This is not the only example of *ἄξιος* and *τυχεῖν* competing for intervening genitives: compare, for instance, *ἄξιος καὶ ἐλέου καὶ βοηθείας καὶ τιμωρίας παρ' ὑμῶν τυχεῖν* (Antipho 1.21) and *ἄξιος ἂν ἧν συγγνώμης τυχεῖν τινός* (Antipho 4.1.5).

These two cases could be more easily disambiguated by a prosodic boundary preceding the genitives. As to the rest of the sentence, the chiastic arrangement of *ὁ μὲν ἐπιχειρήσας βάρβαρος βάρβαρον ἐπιχείρημα* should make *ἐπιχείρημα* predictable. The discontinuity between *ἐπιχειρήσας* (governor) and *ἐπιχείρημα* (satellite) does not entail structural problems. The participle *ἐπιχειρήσας* is a transitive verb which can be used without a direct object, the expectation for which would be determined by intonation. On the other hand, the attachment of the datives following *ἐπιχείρημα* might be uncertain, either low (that is, to *βάρβαρον*) or high (to *ἐπιχειρήσας*). The possibility that a hearer might opt for attachment to a distant element, rather than to a close one, is determined by the plausibility of the datives modifying an adjective from which they are separated by the noun which the adjective modifies. Ideally, this should be tested against a representative corpus of natural Attic usage.

In the same paragraph, Gagarin quotes a sentence from Antiphon's *Second Tetralogy* (2.9), which he deems 'nearly incomprehensible':

> *ἀπολύει δὲ καὶ ὁ νόμος ἡμᾶς, ᾧ πιστεύων, εἴργοντι μήτε ἀδίκως μήτε δικαίως ἀποκτείνειν, ὡς φονέα με διώκει.*
>
> 'The law acquits us, trusting in which—for it prevents both unjust and righteous killing—he prosecutes me as a murderer.'

To begin with, a non-projective dependency connects *νόμος*, which is the antecedent of the relative pronoun *ᾧ*, to the top node of the relative clause (that is, its verb *διώκει*; Figure 4.10). This pattern is a type (c1) hyperbaton according to the classification introduced above (see Figure 4.2). Between the antecedent and the beginning of the relative clause only *ἡμᾶς* occurs, which cannot possibly be mistaken for the antecedent of *ᾧ*. The relative pronoun is assigned the same referent as *νόμος*, which rules out the possibility that this is also interpreted as the agent of *πιστεύων*. In other words, the subject of the relative clause is not expected to be anaphoric to *νόμος*. Another non-projective dependency is that connecting *ᾧ* to *εἴργοντι*, an

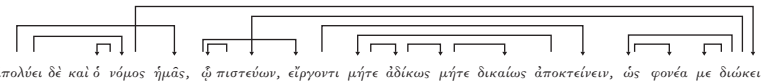

Figure 4.10. Dependency graph of '*ἀπολύει δὲ καὶ ὁ νόμος ἡμᾶς, ᾧ πιστεύων, εἴργοντι μήτε ἀδίκως μήτε δικαίως ἀποκτείνειν, ὡς φονέα με διώκει*'.

appositive conjunct participle (that is, a participle which corresponds to a non-restrictive relative clause).[48] There are no reasons to infer that the integration of *εἴργοντι* would have been difficult. Agreement shows clearly that it is to be construed with *ᾧ*, and the entire phrase it governs would probably be uttered with a parenthetical intonation (see 4.4.1). Some other prosodic boundary would guarantee that hearers construe the subsequent adverbs with the infinitive (right attachment). The rest of the relative clause is arranged linearly, and the final verb is highly expected. To sum up, it is doubtful that a native speaker would have found this sentence nearly incomprehensible upon hearing it (*pace* Gagarin 1997: 34).

Let us now turn to another example and analyse lines 12–14 of Pindar's seventh Isthmian Ode:

> *ἢ Δωρίδ' ἀποικίαν οὕνεκεν ὀρθῷ / ἔστασας ἐπὶ σφυρῷ / Λακεδαιμονίων.*
>
> 'Or because you set the Doric colony of the Lacedaemonians up on a straight ankle.'

This sentence is highly non-projective (Figure 4.11). Sulzer (1961: 48) classifies it as an instance of 'zerdehnt' (overstretched) word order; according to Rossi (1978), the distances between *οὕνεκεν* and *ἔστασας*, determined by the position of *ὀρθῷ*, and that between *ἀποικίαν* and *Λακεδαιμονίων* are cases of 'abnormal' hyperbaton, and therefore sources of difficulty. Now, a verb in the indicative like *ἔστασας* is anticipated by the conjunction *οὕνεκεν*. There is no risk that *ὀρθῷ* should be considered an argument of *ἔστασας*: *ὀρθός* is never used as a noun in the masculine, let alone if it is not preceded by an article, and *ἵστημι* does not govern the dative. Conversely, *ὀρθῷ* sets up an expectation for a noun, which is satisfied by *σφυρῷ*. The subordinating conjunction *οὕνεκεν* might itself be unexpected, given the presence of another conjunction (*ἢ*) at the very beginning of the sentence. However, this concern disappears if some context is taken

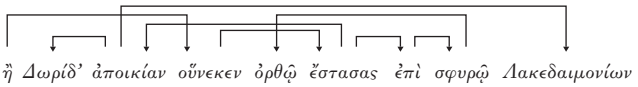

Figure 4.11. Dependency graph of Pi. *I.* 7.12–14.

[48] Cf. Rijksbaron 2002: 132–3. The semantic subject of such participles is often different from the subject of the clause they belong to; see Pompei 2006: 381.

into account: the sentence starting at line 9 and immediately preceding this one reads:

> *ἢ ὅτε καρτερᾶς / Ἄδραστον ἐξ ἀλαλᾶς ἄμπεμψας ὀρφανόν / μυρίων ἑτάρων ἐς Ἄργος ἵππιον;*
>
> 'Or when you sent Adrastus back from the mighty war-shout, bereft of countless companions, to Argos, home of horses?' (transl. D. A. Svarlien)

Here, initial *ἢ* is followed by another subordinating conjunction (*ὅτε*), and this structure is likely to prime that of the following sentence. As to *Δωρίδ' ἀποικίαν*, which appears before the subordinator *οὕνεκεν*, this is a case of displacement of a constituent from the subordinate clause it belongs to. This construction is anything but rare in Classical Greek, especially in 'quasi-spoken' Classical Greek, and it is particularly common when the superordinate verb governs an object substantive clause; in this case, however, the implied main verb is *εὔφρανας* ('you delighted', l. 3), and the subordinate clause is adverbial (Chanet 1988, Slings 1992: 105–8). In the ode, *εὔφρανας* has *θυμὸν τεόν* (l. 2) as a direct object. The source of delight is expressed by a variety of parallel but different constructions: adverbial clauses, prepositional phrases introduced by *ἀμφί*, or the genitive. This rules out the possibility that *Δωρίδ' ἀποικίαν* might be mistaken as the direct object of the implied verb. The only word which seems to have been difficult to integrate in the structure of the sentence is the final genitive *Λακεδαιμονίων*. It immediately follows a different noun from the one it truly modifies, and the chances are that it might have been more easily, but erroneously, interpreted as a modifier of *σφυρῷ* rather than of *ἀποικία*.

This small sample shows that even though some intuitions are right, it has been hard for scholars to truly enter a native speaker's mind, so to speak: we cannot help reading Classical Greek through the lens of our partial and acquired linguistic competence. Moreover, we are limited to the written medium. A psycholinguistic approach helps us, and forces us to reconstruct the mechanisms which underlay a native speaker's comprehension in the appropriate medium. In the absence of native speakers, we cannot test experimentally the assumptions derived from this approach. However, we possess some valuable testimonies of what sounded clear or unclear to native speakers: the examples that the ancient rhetoricians or commentators

provide. If we believe that they chose them because they did find them empirically difficult (sentence *x* is difficult and, theoretically, construction *y* is difficult → sentence *x* has construction *y* → sentence *x* is a good practical example of the difficulty of construction *y*) at least under certain comprehension conditions (on-line/off-line), and not just to prove their point (theoretically, construction *x* is difficult → sentence *y* has construction *x* → sentence *y* must be difficult), they can work for us as a replacement of the experimental results, as argued above (4.2).

In particular, ancient *metatheseis* can be a very pertinent testing ground. As I have mentioned, rewriting a sentence or a passage was a way for ancient commentators to either show how bad the style of that passage was (if their *metathesis* was meant to improve the text), or how good it was (if they could not improve it). In some cases, they just tried to provide an alternative without implying that it was better or worse than the original. *Metathesis*, as a method, was supposed to call on the *empirical* judgement of the readers. Dionysius of Halicarnassus, for instance, is very explicit as he invites readers to judge for themselves whether his rewriting is inferior or superior to a passage from Isocrates (*Dem.* 19; see de Jonge 2008: 382–3). Besides, it is hard to imagine a purely 'ideological' selection process for texts to be rewritten (theoretically, features *a, b, . . . z* are good/bad → text *x* has features *a, b, . . . z*, therefore it is good/bad → rewrite text *x* altering features *a, b, . . . z*). An empirical process seems easier to assume: text *x* is good/bad → text *x* happens to have features *a, b, . . . z*, and as a matter of fact, features *a, b, . . . z* are supposed to make text good/bad → rewrite text *x* altering features *a, b, . . . z*. Showing the difference between the original text and a possible *metathesis* is meant to convince the reader that the altered features determine how the text is perceived empirically. The original and the rewritten texts must have the intended effect on the reader in the first place, in order for the argument to be persuasive.

In the treatise *On Thucydides* (section 25), Dionysius rewrites a long sentence from Chapter 34 of Book 4 of the historian, in order to show how Thucydides could have made it 'clearer and more pleasant' (*σαφεστέρα δὲ καὶ ἡδίων*). As I argue, it is likely that his *metathesis* was indeed clearer than the original to a native speaker. This is confirmed by a comparison based on the reconstruction of the

comprehension processes, as I shall briefly show. Below, I print the two versions as parallel texts:

Th. 4.34

τῶν δὲ Λακεδαιμονίων οὐκέτι ὀξέως ἐπεκθεῖν ᾗ προσπίπτοιεν δυναμένων, γνόντες αὐτοὺς οἱ ψιλοὶ βραδυτέρους ἤδη ὄντας τῷ ἀμύνασθαι, καὶ αὐτοὶ τῇ τε ὄψει τοῦ θαρσεῖν τὸ πλεῖστον εἰληφότες πολλαπλάσιοι φαινόμενοι καὶ ξυνειθισμένοι μᾶλλον μηκέτι δεινοὺς αὐτοὺς ὁμοίως σφίσι φαίνεσθαι, ὅτι οὐκ εὐθὺς ἄξια τῆς προσδοκίας ἐπεπόνθεσαν, ὥσπερ ὅτε πρῶτον ἀπέβαινον τῇ γνώμῃ δεδουλωμένοι ὡς ἐπὶ Λακεδαιμονίους, καταφρονήσαντες καὶ ἐμβοήσαντες ἁθρόοι ὥρμησαν ἐπ᾽ αὐτοὺς [. . .].

'Since the Lacedaemonians were no longer able to dash out rapidly where they attacked before, the light troops, finding that they were by then slower as they were defending themselves, and having themselves gained most of their courage for the sight, since they seemed many more themselves, and having become more familiar with the fact that they no longer seemed to them as terrible, since they had not suffered things worth what they feared, as when they first disembarked subjugated by the idea that they were to fight the Lacedaemonians, with disdain and shouting they rushed in crowds against them.'

D.H. *Th.* 25

τῶν δὲ Λακεδαιμονίων οὐκέτι ἐπεκθεῖν, ᾗ προσπίπτοιεν, δυναμένων, γνόντες αὐτοὺς οἱ ψιλοὶ βραδυτέρους ἤδη, συστραφέντες καὶ ἐμβοήσαντες, ὥρμησαν ἐπ᾽ αὐτοὺς ἀθρόοι· ἔκ τε τῆς ὄψεως τὸ θαρρεῖν προσειληφότες, ὅτι πολλαπλάσιοι ἦσαν, καὶ ἐκ τοῦ μηκέτι δεινοὺς αὐτοὺς ὁμοίως σφίσι φαίνεσθαι καταφρονήσαντες, ἐπειδὴ οὐκ εὐθὺς ἄξια τῆς προσδοκίας ἐπεπόνθεσαν, ἣν ἔσχον ὑπόληψιν, ὅτε πρῶτον ἀπέβαινον τῇ γνώμῃ δεδουλωμένοι ὡς ἐπὶ Λακεδαιμονίους.

'Since the Lacedaemonians were no longer able to dash out rapidly where they attacked before, the light troops, finding that they were by then slower, formed in a mass and shouting, rushed in crowds against them: having gained their courage from the sight, since they were many more, being disdainful since they no longer seemed to them as terrible, because they had not suffered things worth what they feared, which prejudice they had, when they first disembarked subjugated by the idea that they were to fight the Lacedaemonians.'

From the point of view of 'content-clarity', Dionysius eliminates the *paremptoseis* ranging from *καὶ αὐτοὶ τῇ τε ὄψει* to *ἐπὶ Λακεδαιμονίους* and moves their contents to the end (*ἔκ τε τῆς ὄψεως . . . ἐπὶ Λακεδαιμονίους*, cf. 4.2, example 17).

Dionysius' alterations also affect 'form-clarity'. If we start from the original text of Thucydides, after the initial genitive absolute, a long series of participles in the nominative precedes the main verb (*γνόντες*, *εἰληφότες*, *φαινόμενοι*, *ξυνειθισμένοι*, *καταφρονήσαντες*, *ἐμβοήσαντες*). *Εἰληφότες* and *ξυνειθισμένοι* are coordinate to one another by means of *τε* and *καί*, and the entire pair is coordinate to *γνόντες* by means of the previous *καί*. *Φαινόμενοι*, on the other hand, is subordinate to *εἰληφότες*. This complex hierarchical structure would not be easy to reconstruct on-line as the sentence is heard or read. The first *καί* raises the expectation for a participle to be coordinate to *γνόντες*. The connective particle *τε* does not show in an obvious way that it will eventually coordinate the expected participle, more than any other element of the participial clause, to some other element which will follow; in other words, it is not obvious that its scope is the participle. Since *καὶ ξυνειθισμένοι* immediately follows *φαινόμενοι*, the chances are that in the first place it can be interpreted as coordinate to *φαινόμενοι* itself, which is unequivocally subordinate to *εἰληφότες*. Dionysius' metathesis makes all such relations explicit, as he replaces *φαινόμενοι* with a finite verb causal clause (*ὅτι πολλαπλάσιοι ἦσαν*). We might suspect that a speaker would place some prosodic boundary between *φαινόμενοι* and *καὶ ξυνειθισμένοι*, making it clear that the latter participle belongs to the same hierarchical level as *γνόντες*. The correct phrasing, however, might not have been obvious at first sight upon unrehearsed reading. Moving on, Thucydides uses *αὐτοί* both as an anaphoric pronoun referring to the Lacedaemonians (*αὐτοὺς . . . βραδυτέρους ἤδη ὄντας*, *αὐτοὺς ὁμοίως σφίσι φαίνεσθαι*, *ἐπ' αὐτοὺς*) and as a demonstrative pronoun referring to the skirmishers (*οἱ ψιλοί . . . αὐτοὶ . . . φαινόμενοι*). Dionysius instead only uses *αὐτοί* to refer to the Lacedaemonians, removing all potential ambiguities in reference assignment. Thucydides also inserts centre-embedded clauses with a finite verb in the third person plural (*ὅτι . . . ἐπεπόνθεσαν*, *ὥσπερ ὅτε . . . ἀπέβαινον*) between the subject of the main verb (*οἱ ψιλοί*) and the main verb itself (*ὥρμησαν*). The subject of these centre-embedded verbs is the same as that of the matrix verb, and as we have seen, it is likely that the centre-embedded verbs might have interfered with

the integration of the matrix verb, especially in the absence of overt prosodic information. Dionysius turns this nested structure into a linear one, with centre-embedded clauses becoming final-embedded (*καταφρονήσαντες*, *ἐπειδὴ . . . ἐπεπόνθεσαν*, and *ἔσχον ὑπόληψιν*, *ὅτε πρῶτον ἀπέβαινον*). Of course, Dionysius need not have thought of the changes he made in these terms, which makes them all the more significant, in that they are even more likely to reflect what he empirically considered clearer than what he theorized to be clearer. In the end, we might be able to go some way towards reading an ancient writer's mind.

5

Processing Attic Oratory in Performance

An Experiment in Reconstruction

5.1 DESIGN

In Chapter 2 we raised the question whether it is the case that Attic prose texts that were meant for oral delivery in public situations were optimized for on-line comprehension from the point of view of their linguistic form, whereas texts which could be perused at leisure could, but need not, prioritize other concerns than optimal processability (2.3). In other words, we would expect texts that could not be re-accessed by the audience in their immediate context of reception to present the smallest number possible of potential hindrances to effective processing; if such hindrances are anywhere to be found, we would expect that they only occur to a significant extent in texts that allowed this possibility. This chapter will explore the possibility of verifying these hypotheses on a corpus of speeches conceived as scripts (see 3.4.3), which would be expected to show such an optimization, and on one of fictional speeches (conceived as scriptures), for which processability would not be a priority. These include model speeches for rhetorical teaching, speeches reported within historical narrative, speeches meant only for private circulation and recitation, and the speeches embedded in Platonic dialogues. Selecting corpora from the same genre (oratory) minimizes the amount of linguistic variation that could be ascribed to differences in literary and rhetorical conventions, which would make actual Attic speeches and prose scriptures of other genres (e.g. historiography or philosophy) less directly comparable, at least in principle (see Hunston 2008). Ideally, we should be able to build a corpus of texts that differ only

with respect to their intended mode of reception. In practice, this would yield a very limited selection of speeches and would ultimately be an abstraction; we would need two different versions of the very same speech, each of which ought to be composed independently of the other. On the other hand, other categorizations could be responsible for variation within Attic oratory as a genre, namely authorship and rhetorical sub-genres. Minimal pairs of speeches composed by the same author in the same sub-genre but for different modes of reception are very few. One such is that of Antiphon's *Tetralogies* and his real court speeches (see Gagarin 2002: 135–69). Other possible pairs perhaps are those comprising Isocrates' *Antidosis*—a forensic speech *sui generis*—and his early logographic speeches, if one believes that they were composed for real lawsuits. With other authors, like Lysias, problems of attribution arise (see Todd 2007: 26–32) making it difficult, if not completely pointless, to try to establish minimal pairs of this kind. For the purpose of this research, no distinction will be made between the sub-genres of oratory. It is true that forensic, assembly, and epideictic speeches belong to somewhat different communicative situations, but the differences may be assumed to be very slight, especially as regards the attitude of the audience, with all other components being arguably the same (cf. 2.3). It may be assumed that real epideictic, forensic, and political speeches would not need to be easier to process with respect to one another to a significant extent (understandability is different issue, cf. 4.1). The categories included in the corpus are shown in Table 5.1, together with the texts chosen to represent them:

To represent forensic scripts, I have chosen two speeches of Lysias, one of Demosthenes and one of Antiphon. Lysias 12 (*Against*

Table 5.1. Composition of corpora

	Oratorical scripts	Oratorical scriptures
Forensic	Lys. 1 (*On the Murder of Eratosthenes*) Lys. 12 (*Against Eratosthenes*) D. 22 (*Against Androtion*) Antipho 1 (*Against the Stepmother*)	Pl. *Ap.* Antipho 4 (*Third Tetralogy*)
Political	D. 9 (*Third Philippic*) D. 15 (*On the Liberty of the Rhodians*)	Isoc. 6 (*Archidamus*) Isoc. 7 (*Areopagiticus*)
Epideictic	Hyp. 6 (*Funeral Speech*)	Th. 2.35–46 Pl. *Mnx.* Isoc. 9 (*Evagoras*)

Eratosthenes) is the only speech that Lysias delivered personally and one of the few in the *Corpus Lysiacum* whose authorship has never been questioned. On Lysias 1 see 3.4.3. Demosthenes 22 (*Against Androtion*) is a logographic speech which Demosthenes wrote for a certain Diodorus (Kirchner 1901: 263, s. v. *Διόδωρος* [3919]), who, together with Euctemon, attacked Androtion, a prominent politician. For the same client, he also wrote the speech *Against Timocrates* about one and a half years later (cf. Navarre and Orsini 1954: 114, Harris 2008: 167–70). Antiphon 1 (*Against the Stepmother*) is a logographic speech by Antiphon, written for a young man whose father was allegedly poisoned by his wife, the speaker's stepmother. As Gagarin (1997: 7) suggests, it is unlikely that this text was altered much for written publication.

As described in 3.4.3, ancient political speeches are likely to have preserved the materials that writers used to prepare and learn their speeches. The *Third Philippic* is a most interesting case in this respect; as we have seen (3.1), it is very unlikely that it was revised for publication, and therefore it should preserve materials (raw as they may be) conceived specifically in preparation for public delivery. Demosthenes 15 (*On the Liberty of the Rhodians*) is an Assembly speech delivered by Demosthenes in support of the Rhodian democrats who were expelled by the oligarchy established in the island by Mausolus, satrap of Caria, in 355. As for real epideictic speeches, I have selected Hyperides' *Funeral Speech*—probably the 'nearest we have to a full and genuine [funeral] speech' (Todd 2007: 151; see 3.4.3)—in spite of the textual problems due to its preservation on a papyrus.

Plato's *Apology of Socrates* is probably the best known series of fictional forensic speeches. This category also includes model speeches that were used as study materials for rhetorical or philosophical instruction. Of such speeches, I have chosen Antiphon's *Third Tetralogy*. The linguistic difference between the *Tetralogies* and Antiphon's real forensic speeches is quite evident, and this, among other things, has induced some scholars to doubt that they were written by the same author. Gagarin (2002: 52–62) has convincingly argued in favour of their authenticity and has suggested that the explanation for such differences is to be sought in 'the difference in purpose and occasion of these two "genres"', which are ultimately connected to their mode of reception (Gagarin 1997: 33):

> Features found primarily or only in the *Tetralogies* seem to suggest that these were intended to be read and studied, in contrast to the court

> speeches, which were composed for a single oral presentation that would be judged immediately. The greater syntactical complexity of the *Tetralogies* [. . .] suggests a reading audience, and the same features are characteristic of the earliest prose that was certainly intended to be read, the *κτῆμα ἐς αἰεί* [. . .] of Antiphon's reported pupil, Thucydides. The court speeches, on the other hand, seem designed for easier comprehension in oral presentation.

Fictional political speeches are represented in the corpus by two works of Isocrates, the *Areopagiticus* (in which the speaker is the writer himself) and the *Archidamus*. This is a political speech written in the persona of Archidamus III, king of Sparta, and it is not even set in the Athenian Assembly. It can be considered a political pamphlet disguised as a rhetorical exercise. Usher (1999: 308) observes that this speech shows the highest frequency of hyperbaton in the Isocratic corpus. Fictional epideictic speeches are represented by two other funeral speeches, that of Pericles in Thucydides and that of Aspasia in Plato's *Menexenus*, as well as Isocrates' *Evagoras,* in which the writer addresses Nicocles, son of Evagoras, king of Salamis in Cyprus, and praises his recently dead father.

If one wishes to apply a quantitative approach to compare texts and/or groups of texts in a corpus study, some attention must be paid to the size of the texts. For instance, counting five occurrences of a phenomenon in a text totalling 100 words is not the same as counting five in a text which totals 200 words. If one wishes to compare these two scores, one must divide the number of occurrences by the size of the sample in order to obtain the relative frequency of each feature for each sample. In this case, five occurrences over 100 words amount to 0.05, whereas five over 200 amount to 0.025. Problems may arise if features score zero: whatever zero is divided by, the relative frequency would always be zero, which would flatten all differences among texts of different sizes.[1] One way of getting around this problem is to select texts of similar sizes. In general, corpora tend to contain texts of about 2000 words each. In most cases, these are samples of longer texts (cf. Hunston 2008: 165–6). The texts included in the corpus range from a little less than 2000 words to almost 9000. As an 'optimal' text size, I have chosen that of Lysias 1 (about 2400 words): I have cut

[1] Besides, zero frequencies in a sample should not be projected onto the whole population ('zero-frequency problem'), but should simply be taken as an indication of the small probability of a phenomenon.

Table 5.2. Dates of texts and sizes of samples

Text	Date and Source	Words*
Lys. 1	403–*c*.380** (?), Todd 2007	2426
Lys. 12 (1–50)	403/2, Usher 1999	2438
D. 22 (1–33)	355/4, Harris 2008	2447
Antipho 1	419–414 (?), Dover 1950	1732
D. 9 (1–40)	342/1, Sealey 1993	2436
D. 15	352/1–351/0 (?), Karvounis 2002	2238
Hyp. 6	323/2, Herrman 2009	2054***
Pl. *Ap.* (17a–24a4)	392–387 (?), de Strycker and Slings 1994	2409
Antipho 4	428–419/18, Gagarin 2002	1928
Isoc. 6 (1–45)	350s (?), Nicolai 2004	2468
Isoc. 7 (1–47)	357, Nicolai 2004	2469
Th. 2.35–46	after 421, Rusten 1989	1936
Pl. *Mnx.* (236c11–244c3)	after 387	2406
Isoc. 9 (1–43)	after 373, Nicolai 2004	2392

* Words appearing in contracted forms (e.g. *ταὐτό*, *κἀγώ*, *τοὐναντίον*, *τἀληθῆ*, *θἄτερα*, etc.) have been counted as if uncontracted (*τὸ αὐτό*, etc.).
** That is, the whole of Lysias' career, in the absence of specific evidence.
*** Corrupt words which have not been restored in the edition used are excluded from the count.

down larger texts to this size (starting from the beginning of each one) and taken shorter texts in their entirety. A theoretical concern for corpus linguists is that sampling parts of texts might conceal part of the data since different parts of texts could be linguistically different (see Sinclair 1991: 19). As far as the assumptions behind the present corpus study go, this should not be an issue: there is no theory which predicts that certain parts of an oration should be clearer or more obscure than others just because of their position in the text.

Table 5.2 presents the size of each text included in the corpus and its reconstructed date of composition (together with the source consulted). The time span between the earliest (Antiphon's *Third Tetralogy*) and the most recent text (Hyperides' *Funeral Speech*) is about a century.

5.2 METHODOLOGY AND LIMITATIONS

In order to assess potential disruptions of processability in the samples, one may start from reconstructing the word-by-word integration process a native speaker would have carried out for each sentence in

on-line comprehension. Let us take a sentence from Plato's *Apology* as an example:

(1) οὐδὲ γὰρ ἀναβιβάσασθαι οἷόν τ' ἐστὶν αὐτῶν ἐνταυθοῖ οὐδ' ἐλέγξαι οὐδένα.

'For it is possible neither to bring up here nor to question any of them.' (Pl. *Ap.* 18d4–6)

Initial οὐδέ just raises the expectation for some element which it should modify, and γάρ has a discourse-level function, with a scope over the entire clause.[2] The infinitive ἀναβιβάσασθαι raises the expectation both for a governing finite verb and for a direct object, since it is transitive. Moreover, it is a verb of motion; therefore an optional argument expressing direction or provenance (a prepositional phrase or an adverb) is also predictable.

This expectation will be represented graphically as an arrow connecting each word to the elements it requires (V stands for 'verb' and N stands for 'substantival expression'). Subscript letters are indexes: $X \rightarrow \mathrm{N}_{a,}$ $Y \rightarrow \mathrm{N}_{b}$ means that word *X* anticipates a substantive ('noun *a*') and word *Y* anticipates a different substantive ('noun *b*'). The optional argument is indicated by Arg within square brackets.

ἀναβιβάσασθαι $\rightarrow$ V_{a}, $\mathrm{N}_{a,}$ [Arg_{a}]

When οἷόν τε—a single prosodic word—is encountered in this context, that is, following an infinitive, we can argue that it anticipates an impersonal form of the verb εἰμί (on the dependency structure of οἷός τε see Appendix A.5). Ideally, we should be able to verify this assumption by computing the frequency of a sequence like this in a corpus of natural Classical Greek usage. As we have seen, this is impossible, and we can rely only on our knowledge of the grammatical possibilities of the language. The verb anticipated by οἷόν τε is

[2] As Dik (1995: 38) remarks, 'most Greek particles perform functions on the level of discourse' without playing a definite role at clause-internal level (cf. Revuelta 2006: 456, 464). The distinction between particles and adverbs is at first sight quite blurry, as remarked by Revuelta (2006: 468–9). According to Duhoux (2006: 523), it lies in the fact that the particles never point to an extra-linguistic referent and cannot constitute a proposition on their own. The difference between νῦν and the clitic νυν, for instance, lies in the fact that νῦν refers to a specific moment in time, whereas with νυν the function of discourse marker prevails. On the other hand, νῦν can be raised to the same discourse-level function by the postponement of δέ; see K-G 2/II: 117. On this function of δέ see Bakker 1993 and Rijksbaron 1997.

exactly the same as that anticipated by *ἀναβιβάσασθαι*. As a consequence, it has the same index. The double arrow indicates that *οἷόν τε* does not raise the expectation for a new element but strengthens and specifies a previous one. The arguments anticipated by *ἀναβιβάσασθαι* are still expected; this is indicated by curly brackets.

οἷόν τε → → V_a {N_a, [Arg_a]}

At this stage, the finite verb *ἐστίν* is highly expected. The arguments of *ἀναβιβάσασθαι* remain pending.

ἐστίν {N_a, [Arg_a]}

Then, *αὐτῶν* is encountered. This genitive cannot be governed by any of the preceding words and requires some other word to provide its link to the rest of the sentence (its *syntactic valence*; see Appendix A.1). This strengthens the expectation for the object of *ἀναβιβάσασθαι*, which should also govern *αὐτῶν*. Since *αὐτός* is an anaphoric pronoun, the referent it points to is inferred from the preceding discourse context (cf. Kiparsky 2012: 91–2).

αὐτῶν → → N_a {[Arg_a]}

Further on, *ἐνταυθοῖ* satisfies the expectation for an adverbial expression raised by *ἀναβιβάσασθαι*.

ἐνταυθοῖ {N_a}

The position of this adverb implies that there is a distance in the linear order of the sentence between *αὐτῶν* and its governor. This means that a syntactic discontinuity will appear in the sentence, which implies non-projectivity, as Figure 5.1 shows.

As we have seen (4.3.5), non-projective dependencies are not difficult per se. However, yet another element intervenes: the infinitive *ἐλέγξαι*, another transitive verb, which further strengthens the expectation for a noun phrase expressing a direct object:

οὐδ' ἐλέγξαι → → N_a

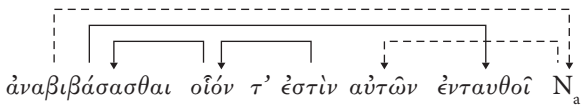

Figure 5.1. Dependency graph of partially parsed sentence ('*ἀναβιβάσασθαι οἷόν τ' ἐστὶν αὐτῶν ἐνταυθοῖ*').

The infinitive is preceded by *οὐδέ*, which coordinates it with the previous one, *ἀναβιβάσασθαι*. We can assume that this would be adequately signalled by prosody, as if it were a parenthetical: *οὐδ' ἐλέγξαι* should be marked off from the rest of the clause by a prosodic boundary (cf. 4.4.1). What matters is that there is no reason to assume that this 'unexpected' infinitive would interfere with the correct integration of any constituent into the partially interpreted syntactic structure; it would just postpone its completion. When *οὐδένα* is finally encountered, it is strongly expected and should be interpreted very easily. In this light, there are no grounds for inferring that native speakers would have found this sentence difficult or unclear upon hearing.

Let us now consider another example:

(2) *ἕως θανάτου ἂν δόξῃ τῷ φεύγοντι ἄξια εἰργάσθαι.*
'Until it should be evident that things worthy of death have been committed by the defendant.' (Lys. 12.37)

Here, *θανάτου* raises the expectation for a governor (anything which could govern a genitive: a verb, a noun, a postponed preposition, etc.) and, being sentence-initial, for a verb. The anticipated elements may or may not coincide (indicated by the symbol $=^{?}$). The expectation for a verb is matched by *δόξῃ*, whose grammatical form is anticipated by *ἕως* and *ἄν*. *Δοκέω* cannot govern a genitive, which implies that *θανάτου* is part of a discontinuous structure, and this is not problematic per se. The verb raises the expectation for a subject-argument (a noun, an infinitive, or a clause) and for an optional second argument (the indirect object in the dative):

θανάτου $\rightarrow \text{Gov}_a =^{?} \text{V}_a$
δόξῃ $\rightarrow \text{Arg}_a\ [\text{Arg}_b]\ \{\text{Gov}_a\}$

If no prosodic information is available, *τῷ φεύγοντι* becomes the most obvious candidate for a second argument of *δόξῃ* (*'it seems to the defendant that . . .'). Incidentally, it is implausible that a native speaker would parse *φεύγοντι* as the governor anticipated by *θανάτου*—this verb would rather require an accusative than an objective genitive (Figure 5.2).

This interpretation is grammatical and semantically plausible. In discourse context, there is nothing that would prevent a reader from building it (the entire sentence reads: *ἐγὼ τοίνυν, ὦ ἄνδρες δικασταί, ἠξίουν ἱκανὰ εἶναι τὰ κατηγορημένα· μέχρι γὰρ τούτου*

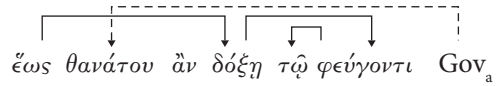

Figure 5.2. Dependency graph of partially parsed sentence ('*ἕως θανάτου ἂν δόξῃ τῷ φεύγοντι ἄξια*').

νομίζω χρῆναι κατηγορεῖν, ἕως ἂν θανάτου δόξῃ τῷ φεύγοντι ἄξια εἰργάσθαι). Unfortunately, it does not convey the meaning intended by the author. In the absence of prosodic information, this sentence is just ambiguous. A naïve first-sight oral reader, who would be unaware of the ambiguity, would probably phrase the intonation of this sentence as follows, with *τῷ φεύγοντι* belonging to the same prosodic unit—whatever its phonetic reality might have been—as *δόξῃ* (the symbol $|_W$ stands for a prosodic boundary a reader might infer from merely written access to the text; see 4.4.1 on implicit prosody):

ἕως θανάτου ἂν δόξῃ τῷ φεύγοντι $|_W$ *ἄξια εἰργάσθαι*

When reading this clause aloud, one should rather place a boundary right after the verb (the symbol $|_O$ stands for a prosodic boundary an oral reader would probably produce based on previous knowledge of the correct syntactic structure):

ἕως θανάτου ἂν δόξῃ $|_O$ *τῷ φεύγοντι ἄξια εἰργάσθαι*

As we have seen (4.4.1) this is a very plausible context for prosody to operate in as a disambiguator. Placing a boundary in the right place would ensure that listeners assign the dative to the second part of the clause (right attachment) and would eventually interpret it as the agent of the passive perfect infinitive.

The corpus contains many other examples of potential ambiguities that could be avoided through correct prosodic phrasing. In some cases, prosody would prevent listeners from considering phrases complete too early—as soon as they are recognized as grammatical enough. This applies if further satellites follow: as a principle, unexpected governors will induce a reanalysis of the partially processed structure, in order to be 'fitted' into it. As above, erroneous, 'written' boundaries are indicated by $|_W$:

(3) *οὐ γὰρ ᾤετο δεῖν ὁ τιθεὶς τὸν νόμον ἐπὶ τῇ τῶν λεγόντων δυνάμει τὸ πρᾶγμα καταστῆσαι, ἀλλ' ὃ δίκαιον ἦν* $|_W$ *εὑρεῖν ἅμα καὶ συμφέρον τῷ δήμῳ, νόμῳ τετάχθαι.*

> 'For the legislator did not believe that the question should depend on the ability of speakers, but that, whatever it was possible to devise that was just and at the same time advantageous for the people,[3] ought to be prescribed by law.' (D. 22.11)

In this sentence, the infinitive *εὑρεῖν* could at first be interpreted as coordinate to *καταστῆσαι* and as dependent on *δεῖν* ('[he] did not believe that it was necessary for the question to depend . . . but to find what was just and at the same time advantageous to the people . . . '). The correct interpretation, according to which *εὑρεῖν* depends on impersonal *ἦν* (the verb of the relative clause), would be ensured by appropriate prosodic phrasing (the two verbs should be part of the same prosodic group when the sentence is vocalized). In the absence of such a prosodic cue, it is likely that when the infinitive *τετάχθαι* is encountered, a number of syntactic relations would need to be reanalysed: *δίκαιον* must be construed as part of the same constituent as *ὅ*, and not as the predicate of *ἦν*; the resulting constituent must be construed as the object of *εὑρεῖν*, and not as the subject of *ἦν*; *εὑρεῖν* must be construed as a satellite of *ἦν* and not as coordinate to *καταστῆσαι*; and the relative clause must be construed as being governed by *τετάχθαι*, not *εὑρεῖν*. In addition, the semantics of *ἦν* must be reinterpreted (from copula to impersonal verb of possibility; see Kahn 2003a: 293–6).

A possible exception to the principle that only satellites can be easily integrated into an already parsed structure is represented by the following sentence, in which an interference effect may probably be prevented by correct prosodic phrasing:

> (4) *ἐμφράγματα γὰρ αὐτοὺς ποιουμένους τῶν ἁμαρτημάτων πολλοὺς τίθεσθαι τοὺς νόμους* |W *ἀναγκάζεσθαι.*
>
> 'For setting up hindrances to criminal actions, they are forced to multiply the laws.' (Isoc. 7.40) ≠ 'they multiply the laws', with *ἀναγκάζεσθαι* left pending.

Here, the infinitive *ἀναγκάζεσθαι* is only potentially difficult because it occurs in a stretch of indirect speech (and corresponds to *ἀναγκάζονται*) and *τίθεσθαι* interferes as an oblique 'main' infinitive.

[3] I take *δίκαιον* and *συμφέρον* as substantivized adjectives accompanying the relative pronoun (lit. 'whatever just and advantageous-for-the-people thing it was possible to invent'). See Probert 2015: 72–3 on this type of 'free' relative clause.

On the one hand, the context primes further 'main' infinitives. On the other hand, a hearer would not necessarily know when *oratio obliqua* would turn back into *oratio recta*. If prosody should clearly indicate that the sentence is not complete at *νόμους*, a main verb would still be expected, and it should not be surprising that it appears as an infinitive.

Likewise, in the following relative clause, continuation prosody (a 'continuation rise'?)[4] could mark the fact that the relative word *ὅνπερ* forms a constituent together with *τρόπον*, its so-called 'incorporated antecedent' (see Probert 2015: 130–5), and would probably not be interpreted as referring to *πόλεμον*:

(5) *κατὰ πόλεμον αὐτὴν ἑλόντες, ὅνπερ τρόπον αἱ πλεῖσται τῶν πόλεων, κτλ.*

'Having taken it by war, by which means most of the cities, etc.' (Isoc. 6.32)

Continuation prosody may prevent listeners from considering the construction complete too early in the next example as well:

(6) *ἐχρῆν μὲν οὖν καὶ τοὺς ἄλλους ἐπαινεῖν* |W *τοὺς ἐφ' αὑτῶν ἄνδρας ἀγαθοὺς γεγενημένους.*

'It was necessary that the others, too, should praise those who, in their own time, had become good men.' (Isoc. 9.5) ≠ '. . . necessary to praise the others, those who . . . '

This sentence of Isocrates is also interesting in another respect, namely, it may be regarded as an example of double-accusative ambiguity (see 4.2, examples 9–11): the semantic roles of *τοὺς ἄλλους* and *τοὺς ἐφ' αὑτῶν ἄνδρας ἀγαθοὺς γεγενημένους* may be easily swapped; the substantivized expressions share number and grammatical case, and, from a semantic point of view, they both refer to groups of human beings that are equally able to be either the agent or the experiencer of the action described by the verb ('to praise'). In a free-word-order language like Classical Greek, the semantic role of the expressions would not be automatically signalled by their position relative to the verb and/or to one another, and it is not likely that prosody would disambiguate such patterns (cf. 4.4.1). Discourse

[4] 'A rise in pitch on the last syllable [. . .] which indicates to the listener that the information conveyed by the phrase is not yet completed'; see Devine and Stephens 1994: 413, 422.

disambiguation would occur only later in the textual context of which the sentence is part. The preceding sentence reads *ὁ δὲ λόγος εἰ καλῶς διέλθοι τὰς ἐκείνου πράξεις, ἀείμνηστον ἂν τὴν ἀρετὴν τὴν Εὐαγόρου παρὰ πᾶσιν ἀνθρώποις ποιήσειεν* ('the speech, if it should recount his deeds properly, would let the virtue of Evagoras be ever remembered by all mankind', Isoc. 9.4), which does not promote any specific interpretation of the ambiguous sentence. This case is different from that of a sentence like *κἀγὼ μὲν ἠξίουν αὐτοὺς μαστιγοῦν τὸν ἐκδοθέντα καὶ στρεβλοῦν* ('and I requested that they whipped and racked [the slave] who was surrendered', Isoc. 17.15). Even if taken in isolation, this sentence would probably not be interpreted as meaning that someone who was surrendered (*τὸν ἐκδοθέντα*) ought to torture some other persons (*αὐτούς*); perhaps this interpretation would be less implausible if the other participant in the action of torturing were a single individual, which would make for a more likely patient than a plurality of persons. Furthermore, the possibility of a wrong interpretation is dispelled by the discourse context. The preceding sentences read *προσῆλθεν ἡμῖν φάσκων ἕτοιμος εἶναι παραδοῦναι βασανίζειν τὸν παῖδα. ἑλόμενοι δὲ βασανιστὰς ἀπηντήσαμεν εἰς τὸ Ἡφαιστεῖον* ('he came to us asserting that he was ready to surrender the slave for torture. As we chose the torturers, we met at the temple of Hephaestus', Isoc. 17.15), and it is more than likely that *αὐτούς* would immediately be interpreted as the subject of *μαστιγοῦν* as the verb is encountered in the potentially ambiguous sentence.

Similar ambiguities derive from the possibility of construing two nouns in the nominative as either the subject or the predicate of a copulative verb (4.2, example 12). An instance of this pattern is found in Hyperides (6.15): *συμβαίνει γὰρ τὸν Λεωσθένους ἔπαινον ἐπὶ ταῖς μάχαις ἐγκώμιον τῶν ἄλλων πολιτῶν εἶναι* ('for the praise of Leosthenes for his battles turns out to be a tribute for the other citizens'). Here, the semantic role of quasi-synonyms *ἔπαινον* and *ἐγκώμιον* could be interpreted in the reverse manner. The preceding context consists of the sentence *καὶ μηδεὶς ὑπολάβῃ με τῶν ἄλλων πολιτῶν μηδένα λόγον ποιεῖσθαι, ἀλλὰ Λεωσθένη μόνον ἐγκωμιάζειν* ('and no one should suppose that I am not talking about the other citizens at all and I am only paying tribute to Leosthenes', Hyp. 6.15). This indicates that the 'praise of Leosthenes' is an active topic in discourse, and as a matter of fact this entity is referred to explicitly right at the beginning of the infinitival clause (the typical position for the clause's topic; cf. Dik 1995 and Matić 2003). Whether this entails

that, in a morpho-semantically ambiguous sentence, this element would be preferentially interpreted as the subject is a question that needs further investigation, and which extends to all cases of ambiguity of this nature, including double-accusative ones. We may hypothesize that the interpretation of such ambiguities could be guided by the information-structural status of the ambiguous elements, or by their accessibility (e.g. would more accessible elements be preferentially interpreted as agents? Or as patients?), or by their semantic properties (e.g. would human entities be perceived to be more 'agentive' and be interpreted as the subject?), and so on. If no such preferences should exist, ambiguities of this kind would induce the wrong interpretation of the sentence only at chance level (50 per cent of the time): in other words, if nothing would induce a native speaker to interpret immediately a constituent like *τοὺς ἄλλους* in sentence (6) as the subject or the object, s/he would have a 50 per cent probability of assigning it the function that the speaker intended. This means that the processing difficulty deriving from the necessity of reanalysing a misinterpreted structure would arise only 50 per cent of the time. On this point, it may be noted that in the native processing of Modern Greek—another language with rich morphology and relatively free word order—in the presence of morphologically ambiguous material (e.g. neuter nouns that may be interpreted as either nominatives or accusatives), syntactic attachments seem to be parsed 'provisionally' and their definitive analysis seems to be delayed (Papadopoulou 2006: 97). If further research in experimental psycholinguistics should reveal that other factors guide the interpretation of these ambiguous sentences in free-word-order languages, and if any recurrent word-order patterns (defined in terms of syntactic, information-structural, or semantic categories) should be identified in the same class of sentences in Classical Greek, this estimate would be excessive. At the present state of knowledge, we cannot reconstruct a 'default' interpretation of such sentences and should simply note that double-nominative or double-accusative ambiguities should not be automatically considered a source of processing difficulty.

The same reasoning applies to sequences containing adverbial subordinators which may be analysed compositionally as prepositional phrases containing a relative pronoun:

(7) *περὶ ὧν Φίλιππος, ἀφ᾽ οὗ τὴν εἰρήνην ἐποιήσατο, οὐ μόνον ὑμᾶς, ἀλλὰ καὶ τοὺς ἄλλους ἀδικεῖ.*

> 'About the wrongs which Philip, ever since he concluded the peace, commits not only against us, but also against the others.' (D. 9.1)

In this sentence—as in a vast majority of cases in Attic—*ἀφ' οὗ* is an adverbial subordinator that should not be analysed synchronically as a sequence of preposition plus relative pronoun (Probert 2015: 172–6). However, examples of this sequence introducing an actual relative clause are occasionally found (e.g. *Κίλιξ, ἀφ' οὗ καὶ Κιλικία κικλήσκεται*, 'Cilix, after whom Cilicia, too, is called', E. fr. 819.7 Nauck[2], where the antecedent of *οὗ* is a personal name), and the supposition may not be excluded that *οὗ* could be mistaken as referring to Philip and that the whole sequence should be reanalysed both referentially and semantically. In the absence of a corpus representative of the linguistic experience of Attic native speakers, however, we are not able to assess what the default interpretation of this expression would be. An analogous case is found in Isocrates:

(8) *τούτους γὰρ εὑρήσομεν, ἐξ ὧν μὲν τοῖς ἄλλοις προσέταττον, πρὸς τοὺς Ἕλληνας διαβληθέντας, ἐξ ὧν δὲ τοὺς ὑβρίζοντας ἠμύναντο, παρὰ πᾶσιν ἀνθρώποις εὐδοκιμήσαντας.*

> 'For we shall find these reproached by the Greeks for the fact that they dictated to the others, and famous among all men for the fact that they defended themselves against the arrogant enemies.' (Isoc. 6.42)

Just as is the case with *ἀφ' οὗ* in sentence (7), *ἐξ ὧν* here may be analysed as an adverbial subordinator. Once again, this sequence may occasionally introduce actual relative clauses, both restrictive (e.g. *τὸν γὰρ ἄνδρα ὁμολογῶν τύπτειν τὰς πληγὰς ἐξ ὧν ἀπέθανεν*, 'Admitting that he gave the man the blows from which he died', Antipho 4.3.1) and non-restrictive (e.g. *ταύτας τὰς συνθήκας, ἐξ ὧν ψευδομένους ἡμᾶς ἔμελλεν ἐξελέγξειν*, 'This agreement, drawing on which he would accuse us of lying', Isoc. 17.32).

A case of morphological ambiguity for which we may postulate a 50 per cent chance level of immediate correct interpretation is found in the following sentence:

(9) *ἵν' ἐξ ἁπάντων ὑμῖν ἐξῇ τῶν ῥηθέντων ἑλέσθαι τὰ συμφορώτατα.*

> 'In order that it may be possible for you to choose, among all things said, the most expedient.' (Isoc. 6.4)

When *ἐξ ἁπάντων* is encountered, it is not clear whether it is masculine or neuter. An early interpretation might consider it to have its scope over *ὑμῖν* ('it may be possible to you among all'). In this case, the gender of *ἁπάντων* would be disambiguated by *ῥηθέντων*. However, we hopelessly lack reliable corpus data which would allow us to gauge to what extent native speakers would have interpreted *ἐξ ἁπάντων* as containing a neuter or a masculine substantivized quantifier by default.

Another potential source of difficulty that we may evaluate only to a limited extent at the present state of research is the attachment of relative clauses to distant antecedents when nearer elements in the superordinate clause are plausible alternative antecedents. As we have seen (4.4.1), it is likely that this was preferential for relative clauses for which far attachment corresponds to (syntactically) high attachment, as in the following sentence of Thucydides:

(10) *αὐτὴ ἡ δύναμις τῆς πόλεως, ἣν ἀπὸ τῶνδε τῶν τρόπων ἐκτησάμεθα.*

'The very power of the city, which we acquired by these means.' (Th. 2.41.2)

Here, the relative pronoun refers to the farther noun *δύναμις*, which governs the nearer candidate antecedent *πόλεως*. As to relative pronouns whose antecedent is far but not higher than a nearer candidate, we need to suspend judgement in the absence of good comparative experimental evidence as regards their comprehension. Cases in the corpus include the following:

(11) *ὑπὸ τῶν νόμων τοὺς πολίτας ἐνεδρεύεσθαι, οἵ κελεύουσι, κτλ.*

'For the citizens to be hindered by the laws, which order, etc.' (Lys. 1.49, cf. 4.4.1)

(12) *ἐνταῦθα βελτίστους ἄνδρας γίγνεσθαι, παρ' οἷς οἱ νόμοι μετὰ πλείστης ἀκριβείας κείμενοι τυγχάνουσιν.*

'That there is where men are better, where [lit. among whom] the laws happen to be fixed with the greatest precision.' (Isoc. 7.39)

The far attachment location for *παρ' οἷς* is *ἐνταῦθα*, the near one is *ἄνδρας*. The demonstrative adverb *ἐνταῦθα* is cataphoric (that is, it points to a referent still to come up; in this case, it indicates an underspecified location, 'there') and would strongly attract the restrictive relative clause introduced by *παρ' οἷς*—cf. the discussion of sentence

(18)—even in the absence of an explicit antecedent showing grammatical agreement (as παρ' ἀνθρώποις would have been).

(13) θαυμάζω δ' ὅσοι τριήρων μὲν ἡγεῖσθαι καὶ στρατοπέδων ἄρχειν ἀξιοῦσιν ἡμᾶς, ὑπὲρ ὧν μὴ καλῶς βουλευσάμενοι πολλαῖς ἂν συμφοραῖς καὶ μεγάλαις τὴν πόλιν περιβάλοιμεν.

'I am amazed at those who think that we are able to command warships and lead armies, about which things, if we did not make the right decisions, we would involve the city in many and large calamities.' (Isoc. 6.5)

The relative pronoun ὧν is neuter and refers to the actions described by the infinitives but it is morphologically indistinguishable from a masculine pronoun, with ἡμᾶς as a candidate for near attachment.

(14) εἰπεῖν δ' ἃ γιγνώσκομεν περὶ ὧν ὑμεῖς μέλλετε κρίνειν οὐκ οἴονται δεῖν ἡμᾶς, ἐν οἷς κατορθώσαντες μὲν ἅπαντας ὑμᾶς ὠφελήσομεν.

'But they do not believe that we should say what we think about what you are about to decide, wherein if we should be right, we shall benefit you all.' (Isoc. 6.5)

The relative pronoun οἷς is neuter, but the nearness of ἡμᾶς could lead it to be perceived as masculine in the first place.

(15) τοὺς ἠσεβηκότας εἰς τοὺς παῖδας τοὺς Ἡρακλέους ἐκβεβληκότες, οἳ δικαίως ἂν ἐξ ἁπάσης τῆς οἰκουμένης ὑπερωρίσθησαν.

'Having cast out those who had sinned against the children of Heracles, who should have rightly been banished from the entire world.' (Isoc. 6.32)

The relative pronoun clearly refers to 'those who had sinned', but 'children of Heracles' is a more immediate antecedent.

(16) περὶ δὲ Ἀθηναίων ἀνδρῶν τοὺς λόγους ποιούμενον, οἷς, κτλ.

'But giving speeches about Athenian men, for whom, etc.' (Hyp. 6.7)

The relative pronoun refers to ἀνδρῶν, not to λόγους.

The following sentence is a particularly interesting case, as it contains a relative clause that has three possible attachment locations:

(17) πολλὰ καὶ ὑμεῖς ὑπὸ τῶν ἐπιβουλευσάντων ἐξηπάτησθε, ὧν οὐδενὸς αὐτοὶ δοῦναι δίκην δίκαιον ἂν εἶναι φήσαιτε.

> 'In many things you too have been deceived by the plotters, for none of which you might say yourselves that it is fair that you should suffer punishment.' (D. 15.16)

The relative pronoun *ὧν* refers to *πολλά* (farthest attachment) but may be misinterpreted as masculine—as would *οὐδενός*—and be attached to *ὑμεῖς* (far attachment) or *ἐπιβουλευσάντων* (near attachment). It is difficult to assess whether the relative clause would be more attracted to a quantifier like *πολλά* or to a personal pronoun like *ὑμεῖς*.

On a related note, it often occurs that (restrictive) relative clauses define the referent to be assigned to their antecedent. In these cases, the expectation for a referent overrides the possible interference of another plausible antecedent preceding the relative pronoun (Levy et al. 2012: 24–9). In the following sentence, for instance, *τούτου* is cataphoric (see Probert 2015: 135–9), and the expectation it raises for a postnominal modifier is stronger than the possibility that the relative pronoun *ὅς* should be considered co-referential with *φόνον*, which intervenes between *τούτου* and the relative clause:

(18) *ἀκούετε, ὦ ἄνδρες, ὅτι αὐτῷ τῷ δικαστηρίῳ τῷ ἐξ Ἀρείου πάγου, ᾧ καὶ πάτριόν ἐστι καὶ ἐφ' ἡμῶν ἀποδέδοται τοῦ φόνου τὰς δίκας δικάζειν, διαρρήδην εἴρηται τούτου μὴ καταγιγνώσκειν φόνον, ὅς ἂν ἐπὶ δάμαρτι τῇ ἑαυτοῦ μοιχὸν λαβὼν ταύτην τὴν τιμωρίαν ποιήσηται.*

> 'You hear, gentlemen, that by the court of the Areopagus itself, for which it is both inherited from our fathers and assigned by us to judge the cases of murder, it has been expressly stated that he shall not be convicted of murder, who, having caught an adulterer with his wife, should take this revenge.' (Lys. 1.30)

The same reasoning applies to declarative clauses, as the following examples from Herodotus illustrate:

(19) *ἔλεγον δὲ καὶ τόδε μοι μέγα τεκμήριον περὶ τῆς χώρης ταύτης οἱ ἱρέες, ὡς ἐπὶ Μοίριος βασιλέος, κτλ.*

> 'The priests told me this, too, as a strong proof about Egypt: that during Moeris' kingdom, etc.' (Hdt. 2.13)

In this sentence, cataphoric *τόδε* (see Humbert 1960: 32) requires a referent, provided by the declarative clause introduced by *ὡς*.

Theoretically, this could have been construed with *τεκμήριον* ('a proof that'). One can compare a sentence like the following:

(20) *ὡς δὲ ἐπιμισγόμενοι Αἰγύπτῳ ἐξέμαθον, μέγα μοι καὶ τόδε τεκμήριον γίνεται· κτλ.*

'That they learnt it by dealing with Egypt, I have this too as a strong proof: etc.' (Hdt. 2.104)

Here, the initial declarative clause is construed with *τεκμήριον*, whereas the referent required by *τόδε* is provided by what follows, with no risk of interference. In the next sentence, the phrase *αὐτὸ τοῦτο* refers to something that was already mentioned, and *ὅτι* is unambiguously construed with *τεκμήριον*:

(21) *καὶ αὐτό μοι τοῦτο τεκμήριον δίκαιον γενέσθαι, ὅτι ὀρθῶς καὶ δικαίως μετέρχομαι τὸν φονέα τοῦ πατρός.*

'And this very thing is for me a lawful proof that I pursue my father's murderer rightly and justly.' (Antipho 1.10)

Going back to prosodic phrasing, appropriate boundaries can prevent listeners from considering phrases not yet complete, when in fact they are. This is the case with examples (2) and (78), as well as with the following:

(22) *καὶ παράδειγμα λέγειν ἔχω τούτου* |$_{O}$ *πᾶσιν ὑμῖν γνώριμον.*

'And I can cite an example of this which is known to you all.' (D. 15.29)—*γνώριμον ὑμῖν*, not *λέγειν ὑμῖν*.

(23) *ἀρκτέον* [. . .] |$_{O}$ *τὰ τοιαῦτα ποιεῖν* |$_{W}$ *ἀναγκάζειν.*

'We must start to enforce doing such things.' (D. 22.6)—*ποιεῖν* depends on *ἀναγκάζειν*, not on *ἀρκτέον* (cf. sentence 4).

(24) *ὅτε μὲν ναῦς οὐκ ἐδοκεῖτ'* |$_{O}$ *ἀποστεῖλαι δυνήσεσθαι.*

'When it did not seem likely that you could dispatch ships.' (D. 22.15)—*ἀποστεῖλαι* depends on *δυνήσεσθαι*, not on *ἐδοκεῖτε*.

(25) *καὶ τούτων ἁπάντων* |$_{O}$ *οὐδὲν ἄλλ' αἴτιον.*

'And nothing else is the cause of all these things.' (Pl. *Mnx.* 244a)—*αἴτιον τούτων ἁπάντων*, not *οὐδὲν τούτων ἁπάντων*, with a partitive genitive.

(26) *τὸ πλῆθος ἦν ὑμῶν* |$_{O}$ *κύριον τῆς σωτηρίας τῆς ἡμετέρας.*

'The majority of your body had authority over our salvation.' (Lys. 12.26)—*κύριον τῆς σωτηρίας*, not *κύριον ὑμῶν*.

(27) *τοῖς μὲν ἄλλοις Ἀθηναίοις ἱκανή μοι δοκεῖ πρόφασις εἶναι* |$_{O}$ *τῶν γεγενημένων εἰς τοὺς τριάκοντα ἀναφέρειν τὴν αἰτίαν.*

'It seems to me that the rest of the Athenians have a sufficient excuse for ascribing the responsibility of what happened to the Thirty.' (Lys. 12.28)—*αἰτίαν τῶν γεγενημένων*, not *πρόφασις τῶν γεγενημένων*.

(28) *κατ' ἀγχιστείαν* |$_{O}$ *αὑτῶν γιγνόμενον.*

'Being their own by right of kinship.' (Isoc. 6.18)

(29) *χρὴ καὶ ἐμὲ ἑπόμενον τῷ νόμῳ πειρᾶσθαι* |$_{O}$ *ὑμῶν τῆς ἑκάστου βουλήσεώς τε καὶ δόξης τυχεῖν ὡς ἐπὶ πλεῖστον.*

'It is necessary that I, too, following the law, try to satisfy the wishes and opinions of each of you as much as possible.' (Th. 2.35.3)—*ὑμῶν* depends on *βουλήσεως*, not on *πειρᾶσθαι*.

(30) *μεθ' οἵας πολιτείας* |$_{O}$ *καὶ τρόπων ἐξ οἵων.*

'With what constitution and from which customs.' (Th. 2.36.4)—*τρόπων ἐξ οἵων*, not *μεθ' οἵας πολιτείας καὶ τρόπων* (on agreement in this type of coordinate sequences see Humbert 1960: 80).

(31) *ὥστε τολμᾶν τε οἱ αὐτοὶ μάλιστα καὶ* (|$_{O}$) *περὶ ὧν ἐπιχειρήσομεν* |$_{O}$ *ἐκλογίζεσθαι.*

'So that we are both most courageous and thoughtful about what we are going to undertake.' (Th. 2.40.3)—*ἐκλογίζεσθαι* is not governed by *ἐπιχειρήσομεν*.

(32) *οὐ στηλῶν μόνον* |$_{O}$ *ἐν τῇ οἰκείᾳ σημαίνει ἐπιγραφή, ἀλλὰ καὶ ἐν τῇ μὴ προσηκούσῃ ἄγραφος μνήμη* [. . .] *ἐνδιαιτᾶται.*

'Not only does the inscription of columns in their homeland give a sign, but the unwritten memory also dwells in foreign lands.' (Th. 2.43.3)—the scope of *μόνον* is not *ἐν τῇ οἰκείᾳ* (*'only in their homeland'), but the entire clause.

(33) *σκέψασθε οὖν ὅσῳ δικαιότερα* |$_{O}$ *ὑμῶν δεήσομαι.*

'Now, consider how much more just my request shall be.' (Antipho 1.21)—*ὑμῶν δεήσομαι*, not *δικαιότερα ὑμῶν*.

(34) *θέλω δὲ καὶ τἆλλα* |$_{O}$ *παραπλήσια ἀπολογηθέντα τούτοις* |$_{O}$ *ἐπιδεῖξαι αὐτόν.*

'I wish to show that also the other things he is alleging in his defence in a similar way to these.' (Antipho. 4.3.1)—*παραπλήσια τούτοις*, not *ἐπιδεῖξαι τούτοις*, and *τἆλλα* does not modify substantivized *παραπλήσια*, which is predicative. See sentence (73) below for further issues.

(35) *εὐσεβέστερον λαβὼν ἐκείνου* |o *τὴν βασιλείαν.*

'Having obtained the throne more piously than him.' (Isoc. 9.39)—the genitive is anticipated by the comparative but could be interpreted as an adnominal modifier of *βασιλείαν*.

(36) *ἥδιον ἂν* |o *εὐλογουμένων ἀκούοιεν.*

'They would listen with more pleasure to the praise of men.' (Isoc. 9.6)—*ἥδιον* modifies *ἀκούοιεν*, not *εὐλογουμένων*.

(37) *ὅσην πρόνοιαν ἐποιεῖτο* |o *ἐν ἅπασιν οἷς ἐτίθει νόμοις* |o *τῆς πολιτείας.*

'What care he took, in all the laws he gave, of the constitution.' (D. 22.30)—the governor of *τῆς πολιτείας* is *πρόνοιαν*, not *νόμοις*; far attachment would be preferred only if the prepositional phrase were pronounced with a parenthetical intonation.

Similarly to (37):

(38) *ὧν οὗτος* |o *ἀδελφὰς πράξεις ἐνστησάμενος* |o *τοσοῦτον διήνεγκε.*

'Whom he, having undertaken deeds of the same kind, so far excelled.' (Hyp. 6.35)—*ὧν* depends on *διήνεγκε*, not on *ἀδελφάς*, and parenthetical intonation would make this clear.

In the following three examples, prosodic boundaries with a disambiguating function would be expected to occur between clitics and their hosts:[5]

(39) *οὐκ* |o *ἐν τῷ ἀχρείῳ τῆς ἡλικίας* |o *τὸ κερδαίνειν, ὥσπερ τινές φασι, μᾶλλον τέρπει, ἀλλὰ τὸ τιμᾶσθαι.*

'In the unserviceable age, it is not gaining wealth that is more delightful, as some say, but being honoured.' (Th. 2.44.4)

[5] The question of the type and degree of prosodic incorporation of clitics with their hosts is a complex one; this incorporation may be more or less 'loose' (see Goldstein 2010: 39 and 43–7) and perhaps would still allow interpreting the clitic as an independent enough 'word'.

Here, the scope of *οὐκ* is *τὸ κερδαίνειν*, not *ἐν τῷ ἀχρείῳ τῆς ἡλικίας*, as indicated by the fact that contrastive *ἀλλά* introduces another infinitive, and not another expression of time. Moreover, the prepositional phrase modifies *τέρπει*, not *κερδαίνειν*. Parenthetical intonation would probably prevent the wrong attachment of the negative, which would otherwise need to be reinterpreted when the substantivized infinitive *τὸ τιμᾶσθαι* is encountered.

(40) *ταὐτόν* |O *μοι ἔδοξαν ἔχειν ἁμάρτημα, ὅπερ καὶ οἱ ποιηταί.*

'They seemed to me to have the same fault as the poets, too.' (Pl. *Ap.* 22d5)—*μοι* is right between two potential governors, *ταὐτόν* ('the same as me') and *ἔδοξαν*.

(41) *εἰκότως ἂν ἀγανακτεῖν* |O *μοι δοκῶ.*

'It seems to me that I am reasonably indignant.' (Antipho 4.2.1)—*ἀγανακτέω* can govern a dative of the person ('to be vexed at someone')

Sometimes, both shortened and overextended phrasings are to be avoided:

(42) *καὶ ὑμᾶς ἡγοῦντο* |O *τῶν παρόντων κακῶν* |O *ἐπιθυμοῦντας ἀπαλλαγῆναι* |O *περὶ τῶν μελλόντων οὐκ ἐνθυμήσεσθαι.*

'And they deemed that you, wishing to be relieved from the present evils, would not think much about the future ones.' (Lys. 12.45)

In this sentence, a speaker or non-naïve oral reader should make sure that *ἐπιθυμοῦντας* is not interpreted as a predicative participle governing the preceding genitive ('they deemed that you desired the present evils'), in which case *ἀπαλλαγῆναι* would be surprising and induce the syntactic reanalysis of the genitive as its own argument. At the same time, the speaker should avoid phrasing *τῶν παρόντων κακῶν ἐπιθυμοῦντας* in such a way as to isolate this sequence as a parenthetical participial clause, which would induce the listener to interpret *ἀπαλλαγῆναι* as depending directly on *ἡγοῦντο* (*'they deemed that you, who desired the present evils, were relieved'). This should be ensured by the boundaries in the first and third position, whereas the second one should prevent the genitive from being construed with the participle. This need not be realized as a pause, as mentioned above, and we may conjecture that it would be combined with the pronunciation of *ἐπιθυμοῦντας* with an intonation indicating continuation.

(43) *οὗτοι γὰρ ἐνταῦθα ἔδειξαν, στασιασάσης τῆς Ἑλλάδος περιγενόμενοι τῷ πολέμῳ, τοὺς προεστῶτας τῶν ἄλλων Ἑλλήνων χειρωσάμενοι, |$_{\text{O}}$ μεθ᾽ ὧν τότε τοὺς βαρβάρους ἐνίκων κοινῇ, τούτους νικῶντες ἰδίᾳ.*

'For these proved [it] here, prevailing in war as Greece was at odds, having overpowered the leaders of the other Greeks, surpassing by themselves those with whom, back then, they had defeated the barbarians in common.' (Pl. *Mnx.* 242e)

The antecedent of the relative pronoun *ὧν* is *τούτους*, which follows the relative clause ('. . . surpassing by themselves those with whom, back then, they had defeated the barbarians in common', with a contrast between *κοινῇ* and *ἰδίᾳ*), not *τοὺς προεστῶτας* (*'. . . having conquered the leaders of the other Greeks, with whom . . . '). A strong boundary should separate *χειρωσάμενοι* from *μεθ᾽ ὧν*, and the intonation of the relative clause should indicate that the clause containing its antecedent follows.

In some cases, evidence for the original prosodic phrasing can be inferred from the position of clitics and postpositive particles and pronouns, according to Wackernagel's law:[6] if postpositives appear in the second position in a *colon*, then *colon* boundaries should be placed before the element preceding a postpositive[7] (the literature is extensive; see Wackernagel 1892, Fraenkel 1933, Fraenkel 1964, Devine and Stephens 1994: 42–30, Dik 1995: 36–7, Dik 2007: 17–22, Marshall 1987, Scheppers 2011: 4–7, Goldstein 2010, and Agbayani and Golston 2010). The following sentences contain disambiguating 'Wackernagel boundaries':

(44) *τούτων εὐλογήσονται μᾶλλον |$_{\text{O}}$ ὧν ἂν ἀμείνους σφᾶς αὐτοὺς παράσχωσιν.*

'They will be praised more than those than whom they should have made themselves better.' (Isoc. 9.5)—*μᾶλλον* is structurally

[6] Postpositives are defined by Dover (1960: 12) as words that 'never occur at the beginning of a clause'. Postpositive particles include *ἄν*, *ἄρα*, *αὖ*, *γάρ*, *γοῦν*, *δέ*, *δή*, *δῆθεν*, *δήπου*, *δήπουθεν*, *δήποτε*, *δῆτα*, *μέν*, *μέντοι*, *μήν*, *οὖν*, and *τοίνυν*; postpositive pronouns include the oblique cases of anaphoric *αὐτός* and of *σύ*, *ἡμεῖς*, and *ὑμεῖς*, when unemphatic (Scheppers 2011: 4).

[7] Such an initial element may be either a word or a complete constituent. Postpositive particles may break up constituents (e.g. *ὁ δὲ θεός*), whereas clitic pronouns normally do not (cf. Dik 1995: 33).

necessary for *τούτων* to be integrated in the sentence; however, the high frequency of comparatives followed by genitives might induce readers and listeners to construe *ὧν* also as depending on *μᾶλλον*, which would be prevented by the prosodic boundary implied by the position of *ἄν*.

(45) *ἴδοιμεν γὰρ ἂν* |$_{O}$ *ἐκ μὲν τῆς φαυλοτέρας εἶναι δοκούσης ἐπὶ τὸ βέλτιον ὡς ἐπὶ τὸ πολὺ τὰς πράξεις ἐπιδιδούσας.*

'For we might see that from one which seems to be more ordinary, in many cases fortunes advance for the better.' (Isoc. 7.5)—the prepositional phrase introduced by *ἐκ* depends on *ἐπιδιδούσας*, not on *ἴδοιμεν*.

(46) *καλλίστην οὖν εἶναι πρόφασιν* |$_{O}$ *τιμωρεῖσθαι μὲν δοκεῖν.*

'Now, this was an excellent excuse to seem to exact punishment.' (Lys. 12.6)—*τιμωρεῖσθαι* depends on *δοκεῖν*, not on *εἶναι*.

(47) *ἔφη ἱκανὴ εἶναι* |$_{O}$ *ἐκείνῃ τε τὸν Φιλόνεων φίλον ποιῆσαι.*

'She said that she was capable of bringing Philoneos close to her.' (Antipho 1.15)—*ἐκείνῃ* does not depend on *ἱκανὴ εἶναι*.

(48) *ὅσοι* |$_{O}$ *τῶν μὲν ἄλλων ἕνεκα.*

'Those who, for other purposes.' (Isoc. 9.41)—*τῶν ἄλλων* is not a partitive which depends on *ὅσοι*.

To sum up, one way of assessing possible difficulties in native sentence processing of Classical Greek texts is to reconstruct what expectations are set up by each word and what expectations each word satisfies when it is encountered. For each word, one should establish whether the partial interpretation of the syntactic structure up to that word corresponds to the correct one that would be construed as the sentence reaches completion. If this is not the case, words which follow might either be difficult to integrate at all or could be integrated wrongly. If the wrong analysis is still grammatically plausible (and possibly also semantically different), then the structure is ambiguous. If the wrong analysis becomes ungrammatical as more words are encountered, then, at some point, the comprehender will have to reanalyse the structure in order to make sense of it and establish the correct hierarchies. This has a cognitive cost and will cause the structure to be perceived as difficult. An important factor to take into account when reconstructing such

processes is the possibility that paralinguistic elements such as prosody and gesture can work as disambiguators in several cases. Therefore, it is necessary to envisage which of these contextual elements could have been used by a non-naïve oral reader (that is, one who was aware of ambiguities) or a speaker while delivering a text. An important limitation to this method is that we are not always in a position to reconstruct the default interpretation of potentially ambiguous structures with a reasonable degree of plausibility. The ambitious task of reconstructing the native comprehension of a dead language such as Classical Greek will certainly benefit from progress in our knowledge of sentence processing and new comparative evidence from free-word-order languages, as well as from refinements in our understanding of word-order patterns in the language itself.

The application of the procedure described here to a corpus study to answer a research question such as that outlined above needs to take account of such limitations. As mentioned above, comparisons between texts or groups of texts require the quantification of the linguistic phenomenon that one intends to study. This task presents significant challenges in our case.

For one thing, the models of language comprehension described in Chapter 4 compute precise numeric values which are intended to be a function of the actual reading times for each word, or that should correlate to the electrical activity of the brain measured during comprehension tasks. In the absence of a corpus of natural Attic usage, we cannot even try to apply mathematical techniques to compute such values, which are based on structural probabilities and the dynamic cognitive load of comprehension processes on memory. Moreover, not all of the factors which have been shown to play a role in language comprehension have been implemented in one and the same standard mathematical model.

For another, we may not wish to capture all the complex aspects that would have contributed to sentence processing difficulty in Classical Greek, either because some of the questions raised by this exploration have not yet been specifically addressed in experimental research, or because we lack typologically valid comparative evidence. This directly increases the risk of false positive results—we might at this stage ascribe processing difficulty to linguistic structures which, in principle, may be found to be easily processable as research advances—and implies that the results of this 'experiment' would be especially valid as regards the hypothesis that Attic prose scripts were

optimized for on-line comprehension, and less so for the hypothesis that difficulties should appear only in scriptures. In order to minimize the risk of false positives, uncertain cases such as those discussed above (sentences 6, 7–14, 37–9) will not be regarded as potential sources of difficulty. Analyses of sentences for which, at the present state of knowledge, we are able to plausibly reconstruct a default interpretation (based on the ancient evidence and modern findings presented in Chapter 4) enable us to estimate whether, in on-line oral comprehension, each word:

- would have been attached to the wrong element;
- would have been surprising, especially if the preceding part of the sentence was parsed wrongly;
- would have been assigned the wrong referent;
- would have been assigned the wrong semantic role (for instance, in cases where an accusative could be interpreted as an agent or a patient with a transitive verb in the infinitive);
- would have been assigned the wrong function (for instance, substantivized infinitives interpreted as predicates).

An at least partial estimator of the processing difficulty of a Classical Greek sentence may be given by the number of temporary hindrances and misanalyses of this kind, which would be corrected as soon as the syntactic and semantic structures are made clearer by the subsequent linguistic input or as soon as the constructed meaning is found to clash with the right one, if this is inferable from the preceding or following discourse context. Such an estimator is not conceived as a function of any psycholinguistic measurement of the cognitive cost of disambiguation and reanalysis, since we are not in the position to reconstruct the size of the increase in a native speaker's cognitive activity corresponding to the correction of every type of wrong analysis or to the delayed integration of constituents whose semantic role and/or dependency relationships are temporarily uncertain. Interpretations can be 'corrected' more than once as the sentence builds up and such 'corrections' can involve several factors (syntax, semantics, reference) at the same time. For instance, a word could be reassigned a referent and attached to a different syntactic constituent, in which case two cognitive operations can be discerned. Such 'corrections' would have induced some experimentally measurable effect, but this way of operationalizing difficulty is independent from the assessment of such

effects. For the purposes of this 'experiment', I will refer to 'corrections' as 'reanalyses', with no implications as to their exact physio-psychological reality, but only as a nominal designation of a psycholinguistically motivated linguistic feature. A reanalysis will thus be defined as a reconstructible cognitive operation needed to complete the interpretation of a sentence after the initial parsing.

The difficulty score for each text will be calculated starting from the number of reconstructible reanalyses for that text. This means that it is possible that some texts might score zero. If this measure of difficulty were a function of an observable psycholinguistic measure, this would be absurd: no text is processed at no cognitive load. Incidentally, from a statistical point of view, a zero-frequency score in a sample must not be projected on the entire text, but is merely an indication of the very low probability of finding 'difficult' patterns (at least those whose difficulty may be meaningfully assessed) in the rest of the text.

Along with the assessment of processing difficulty for ancient native listeners (on the assumption of competent oral delivery), the 'experiment' will also attempt to give an account of the difficulty incurred by solitary readers, whether they were the clients of a logographer, 'lecturers' preparing for 'collective' reading (cf. 2.3 and 4.4.1), 'bookish' intellectuals, or later critics and rhetoricians, whose remarks often betray a written bias, as we have seen (4.2). This mode of reception is characterized by the absence of overt paralinguistic (prosodic and gestural) information, which calls for a slightly different operationalization of 'difficulty'. 'Readability' will be distinguished from '(oral/aural) processability' by the fact that it will be taken to be indicated by the number of reanalyses reconstructible if the disambiguating effects of prosody and gestures are disregarded. Such a metric of reading difficulty is also more directly relatable to the difficulty that we may experience as modern readers of the classical texts. Being based on the reanalyses required for the correct interpretation of a sentence, this metric will be connected only to the number of local ambiguities in a text—partial parses that mislead the reader and are revealed to be wrong by subsequent linguistic material but ultimately admit of only one grammatical interpretation (see 4.3.2). Globally ambiguous sequences, which admit of at least two grammatical and semantically plausible interpretations, may well escape notice—less attentive readers may simply stick to their initial interpretation and not even realize that other ones are possible—and be puzzling only to scholars and 'ambiguity hunters' (cf. 4.4.1). It is also worth

pointing out that prosodic information may be partially inferred from the written text alone, and this possibility must be taken into account in the reconstruction of reading difficulty. Punctuation was not fully developed in the fourth century BC, but it was not completely absent from Athenian manuscripts either. Early punctuation marks almost certainly included *paragraphi* drawn under the first letters of a line containing the end of a sentence (cf. Isoc. 15.59, Arist. *Rh*. 1409a20; see 4.2) and, probably, double dots (or *dicola*) with a dividing function (Turner 1987: 8–9). Not all prosodic pauses would be marked graphically in the text (cf. Graff 2001: 28–9) but, on the other hand, it is possible that certain linguistic features effectively signalled them. Apart from subordinators and coordinators, this would probably be the case with Wackernagel boundaries, which Dik (1995: 35) appropriately calls 'punctuation after the fact'. If native speakers had an unconscious feeling for this feature of their mother tongue, it is likely that the prosodic phrasing suggested by the location of postpositives could be instinctively generated in their mental 'inner speech' as they read (see 4.4.1). This would presuppose that postpositives were 'activated' in comprehension at the same time as the constituent they followed: if postpositives were perceived only after the constituent, their 'punctuating' effect would be retroactive and potentially induce reanalysis. A condition for the concomitant 'activation' of the constituent and the postpositive would be that the constituent be (graphically) short enough for the postpositive to be relatively close to the readers' centre of vision, in the area in which the shape and length of words are identified (see Vatri 2012: 638, Battezzato 2009: 7). Arguably, this would be facilitated by the absence of spaces in writing. For instance, a sequence like <*EKMEN*> (sentence 45) would likely be perceived as a whole (both auditorily and visually),[8] and it is conceivable that the prosodic cue provided by the postpositive particle could readily be inferred by a native reader.[9] This would not necessarily

[8] There is experimental evidence that novel (i.e. non-lexicalized) compound words are perceived holistically provided that they are short enough, whereas only long compounds are decomposed (see Hyönä et al. 2015). Judging from the tendency of clitic groups to univerbate in fourth-century Attic (as revealed by phonological phenomena such as Vendryes' law in words like ἔγωγε and ἔμοιγε; see Probert 2006: 88), it does not seem unreasonable to postulate that such groups were not perceived differently from novel compounds.

[9] In the context of sentence (45) the entire sequence <*EKMENTHΣΦA*> would probably have fallen into the readers' centre of vision, and probably the digraphs

happen if longer words or constituents (a plausible upper limit would be ten letters)[10] preceded the postpositive, in which case the Wackernagel boundary could only be inferred retroactively. On this account, the Wackernagel boundary preceding the infinitive *τιμωρεῖσθαι* in sentence (46) would be inferred in reading only after the infinitive was processed (and initially interpreted as an argument of *εἶναι*).

5.3 'I LIKE DRINKING WATER', OR: INDIFFERENT INTERPRETATIONS

Before presenting the results of the 'experiment', I shall briefly describe some globally ambiguous structures whose possible interpretations, albeit not necessarily being fully equivalent from a semantic point of view, are ultimately equipollent as far as the understandability of the message is concerned (see 4.1). The corpus, for instance, contains several cases of *apo koinou* constructions (the constituent which may be an argument of more than one verb is underlined with an unbroken line, whereas the governing verbs are underlined with a dashed line):

(49) *ταῦτα μὲν οὐ παρὰ μικρὸν ἀγωνιζόμενος παρ' ὑμῖν ἀπελυσάμην.*
'Well, I did away with these charges fighting [against them] in your court not by a slight majority.' (D. 22.3)

(50) *οὐχ ὧν ἄν τις μὴ πειρασάμενος ἀγαθῶν στερίσκηται.*
'Not of those goods of which one, not having tried [them], should be deprived.' (Th. 2.44.2)

<*EN*> and <*NT*> would not have been perceived as bordering or containing a word boundary (these digraphs occur as frequently in near-word-boundary locations as in word-central locations; see Vatri 2012: 643–4). It is also true that the only (orthographic) word starting with the sequence <*MENT*> that occurs relatively frequently in Classical Attic is *μέντοι*, as a TLG search confirms. If readers did not instinctively perceive a word boundary between <*N*> and <*T*>, they would probably have interpreted the sequence as the beginning of *μέντοι*, which would have been different from reading simple *μέν* in terms of Wackernagel's law.

[10] Cf. Hyönä et al. 2015 (short compounds: seven to nine letters, long compounds: twelve to sixteen letters).

(51) *τὸν δὲ μιαρὸν τῷ χρόνῳ ἀποδόντες φῆναι* |o *τοῖς ἔγγιστα τιμωρεῖσθαι ὑπολείπετε.*

'Giving up the blood-stained one for time to reveal, leave him for his next of kin to punish.' (Antipho 4.4.11)

In some cases, the attachment of certain constituents is ambiguous, but the meaning is not significantly affected:

(52) *ἀξίαν δίκην τοῦ πάθους τῷ εἰργασμένῳ ἐπιθέντες.*

'Inflicting upon the offender a punishment worth the injury (*ἀξίαν τοῦ πάθους*).' (Antipho 4.1.5) ~ 'an adequate punishment for the injury (*δίκην τοῦ πάθους*).'

(53) *ἵνα αὐτοὶ τὰ προσήκοντα πρῶτοι φαίνωνται ποιοῦντες.*

'So that they may themselves appear the first to be doing what is proper (*πρῶτοι ποιοῦντες*).' (D. 15.25) ~ 'So that they may themselves appear in the first place to be doing what is proper (*πρῶτοι φαίνωνται*).'

In the following sequences the possible interpretations are significantly different from a syntactic point of view, but semantically close enough not to mislead the reader or listener who should opt for the wrong one:

(54) *οὐχ ἑνὶ ἔδωκε τρόπῳ περὶ τῶν ἀδικημάτων ἑκάστων λαμβάνειν δίκην.*

'Not in only one way did he allow to take vengeance for each wrong (*ἑνὶ τρόπῳ λαμβάνειν*).' (D. 22.25) ~ 'Not to one way only did he grant . . . (*ἑνὶ τρόπῳ ἔδωκε*).'[11]

(55) *ἕως ἂν ἡμῖν ὁμολογήσῃ πολεμεῖν.*

'Until he should admit that he is at war with us (*ὁμολογήσῃ πολεμεῖν*).' (D. 9.10) ~ 'Until he should admit to us that he is at war (*ἡμῖν ὁμολογήσῃ*).'

(56) *ἐπειδή τισιν οὐ μετρίως ἐδόκουν προσφέρεσθαι.*

'When they seemed not to be dealing moderately with some (*τισιν προσφέρεσθαι*)'. (D. 9.24) ~ 'When they seemed to some that they were not behaving moderately (*τισιν ἐδόκουν*).'

[11] For an abstract noun as the indirect object of a compound of *δίδωμι* cf. *τῷ χρόνῳ ἀποδόντες*, Antipho 4.4.11.

(57) *τῶν δ' ἔργων τὴν ὑπόνοιαν ἡ ἀλήθεια βλάψει.*

'The truth of the facts will refute the opinion (*τῶν δ' ἔργων ἡ ἀλήθεια*).' (Th. 2.41.4) ~ 'The truth will refute the conjecture of the actions (*τῶν δ' ἔργων τὴν ὑπόνοιαν*).'

(58) *δι' ἐλαχίστου καιροῦ τύχης.*

'In the briefest moment of destiny (*δι' ἐλαχίστου καιροῦ*).' (Th. 2.42.4) ~ 'By the fortune of a briefest moment (*διὰ τύχης*).'—the interpretation of this phrase is anything but straightforward; see Rusten 1986: 69–70 and sentence (85).

(59) *χρὴ τὸ ὑμέτερον σκοποῦντας ἀπολῦσαί με μᾶλλον ἢ καταλαβεῖν βούλεσθαι.*

'You must, considering your own interest, wish to acquit more than condemn me (*βούλεσθαι ἀπολῦσαι μᾶλλον ἢ καταλαβεῖν*).' (Antipho 4.2.8) ~ 'You must . . . acquit me more than wish to condemn me (*ἀπολῦσαι μᾶλλον ἢ βούλεσθαι καταλαβεῖν*)'.

It sometimes occurs that seemingly absolute constructions might be understood as constituents of the matrix clause, as with what may be interpreted as a genitive absolute in the following sentence:

(60) *ἧς ἡμεῖς διεφθαρμένης οὐδὲν φροντίζομεν.*

'To the fact that it has been corrupted, we give no heed.' (Isoc. 7.15) ~ 'It having been corrupted, we give no heed'.

In this case, the genitive is more likely to be an argument of *φροντίζω* (cf. LSJ s.v. on the use of a *genitivum rei* with *φροντίζω* in negative expressions). In this case, the sequence would be an instance of a so-called '*ab urbe condita*' construction—a phrase consisting of a noun modified by a participle where 'the weight of the meaning seems to lie in the participle rather than in the noun' (Jones 1939: 5). If the interpretation as genitive absolute were a plausible alternative, this distinction would probably not really matter much to an ancient native speaker. Other would-be genitive absolutes in the samples also appear at Isoc. 9.19 (*τοῦτον δὲ τὸν τρόπον τῆς πόλεως κατοικισθείσης κατὰ μὲν ἀρχὰς οἱ γεγονότες ἀπὸ Τεύκρου τὴν βασιλείαν εἶχον*), 9.33 (*τοσούτων γὰρ τυράννων ἐν ἅπαντι τῷ χρόνῳ γεγενημένων οὐδεὶς φανήσεται, κτλ.*), and Th. 2.35.1 (*ἀνδρῶν ἀγαθῶν ἔργῳ γενομένων ἔργῳ καὶ δηλοῦσθαι τὰς τιμάς*).

5.4 RESULTS

The following sub-sections will present the results of the 'experiment'; for each text in the sample, possible reanalyses will be described and discussed, as well as other interesting patterns whose analysis is not straightforward. In order to simplify such descriptions, I will use the notation employed at 5.2 and listed in Table 5.3.

Tables at the end of the sub-sections summarize all the reanalyses (as defined in 5.2) that we may reconstruct for both the listening and the reading comprehension condition, if any. These are classified as instances of 'syntactic reanalysis', if the element whose interpretation must be 'corrected' is assigned another position in the hierarchy of the sentence; 'referential reanalysis', if the element (normally a pronoun) must be assigned a different referent; or 'semantic reanalysis', if the element must be assigned a different semantic role (cf. Haupt et al. 2008), gender (on the role of gender in syntax processing see, among others, Padovani et al. 2005), or word class.

5.4.1 Lys. 1

The only potential source of processing difficulty that I have identified in this speech is the far-attached relative clause (1.49) already discussed at 4.4.1 and as sentence (11) in this chapter. At the present state of knowledge, we are not in a position to reconstruct with

Table 5.3. Symbols and abbreviations

→	stands for	*raises the expectation for*
→ →	″	*strengthens the expectation for*
X_y	″	*element* y *belonging to type* X
[X]	″	*optional element*
{X}	″	*element anticipated by a preceding word*
$X =^{?} Y$	″	*elements* X *and* Y *are anticipated, but may coincide*
$\|_O$	″	*prosodic boundary which a speaker or non-naïve oral reader would produce*
$\|_W$	″	*prosodic boundary that a reader might infer from merely written access to the text (implicit prosody)*
N	″	*substantive*
V	″	*predicate*
Arg	″	*argument*
Gov	″	*governor*
Inf	″	*infinitive*

enough plausibility whether such sequences would have been misanalysed by native speakers in on-line processing, and caution demands that they should not be included in the count of reanalysis-inducing patterns.

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 0.

5.4.2 Lys. 12.1–50

(61) *ἔμπειρος γὰρ ὢν ἐτύγχανον τῆς οἰκίας.*
'For I happened to know the house.' (Lys. 12.15)

Both *ἔμπειρος* and *ἐτύγχανον* might govern *τῆς οἰκίας*, which could lead to the misanalysis giving the meaning 'for, being expert, I obtained the house'. On the other hand, once the participle is construed with *ἐτύγχανον*, readers or listeners would no longer expect another argument of the verb in the genitive, which should limit this effect—compare sentences (44) and (35)—and it must also be noted that a prosodic boundary separating *ἐτύγχανον* from *τῆς οἰκίας* would further disambiguate the sequence in favour of far attachment (see 4.4.1).

Another potentially ambiguous structure appears in a passage which some editors have regarded as corrupt:

(62) *εἰ μὲν γάρ τις ἦν ἐν τῇ πόλει ἀρχὴ ἰσχυροτέρα αὐτῆς, ὑφ᾽ ἧς αὐτῷ προσετάττετο παρὰ τὸ δίκαιον ἀνθρώπους ἀπολλύναι, ἴσως ἂν εἰκότως αὐτῷ συγγνώμην εἴχετε.*
'For if there had been in the city a stronger power than that, by which it was ordered to him to destroy people against justice, perhaps you would have pardoned him with some reason.' (Lys. 12.29)

The context preceding this sentence (Lys. 12.27–8) reads:

καὶ μὴν οὐδὲ τοῦτο εἰκὸς αὐτῷ πιστεύειν, εἴπερ ἀληθῆ λέγει φάσκων ἀντειπεῖν, ὡς αὐτῷ προσετάχθη. οὐ γὰρ δήπου ἐν τοῖς μετοίκοις πίστιν παρ᾽ αὐτοῦ ἐλάμβανον. ἔπειτα τῷ ἥττον εἰκὸς ἦν προσταχθῆναι ἢ ὅστις ἀντειπών γε ἐτύγχανε καὶ γνώμην ἀποδεδειγμένος; τίνα γὰρ εἰκὸς ἦν ἥττον ταῦτα ὑπηρετῆσαι ἢ τὸν ἀντειπόντα οἷς ἐκεῖνοι ἐβούλοντο πραχθῆναι; ἔτι δὲ τοῖς μὲν ἄλλοις Ἀθηναίοις ἱκανή μοι δοκεῖ πρόφασις

> *εἶναι τῶν γεγενημένων εἰς τοὺς τριάκοντα ἀναφέρειν τὴν αἰτίαν· αὐτοὺς δὲ τοὺς τριάκοντα, ἐὰν εἰς σφᾶς αὐτοὺς ἀναφέρωσι, πῶς ὑμᾶς εἰκὸς ἀποδέχεσθαι;*
>
> 'And further, supposing he is truthful in asserting that he spoke in opposition, observe that there is no reason to credit his plea that he acted under orders. For I presume it was not where the resident aliens were concerned that they sought to put him to the proof. And then, who was less likely to be given such orders than the man who was found to have spoken in opposition and to have declared his opinion? For who was likely to be less active in this service than the man who spoke in opposition to the object that they had at heart? Again, the rest of the Athenians have a sufficient excuse, in my opinion, for attributing to the Thirty the responsibility for what has taken place; but if the Thirty actually attribute it to themselves, how can you reasonably accept that?' (transl. W. R. M. Lamb).

In this passage, Lysias aims at proving that Eratosthenes' claim that he merely executed orders given by the other members of the Thirty is untenable. It is true that he implies that the Thirty did promote criminal behaviour, but his point is that Eratosthenes is one of the Thirty, and that nobody commanded him to behave as he did. Lysias makes this remark right after the sentence examined here: *νῦν δὲ παρὰ τοῦ ποτε καὶ λήψεσθε δίκην, εἴπερ ἐξέσται τοῖς τριάκοντα λέγειν ὅτι τὰ ὑπὸ τῶν τριάκοντα προσταχθέντα ἐποίουν*; ('but whom, in fact, will you ever punish, if the Thirty are to be allowed to state that they merely carried out the orders of the Thirty?', transl. W. R. M. Lamb).

Sentence (62) has caused some embarrassment to modern interpreters when it comes to the pronoun *αὐτῆς*. If interpreted as anaphoric, this pronoun would lack a referent in the preceding discourse context. As a consequence, it should rather be interpreted as a demonstrative pronoun of identity. In this case, it would easily be construed as the antecedent of the relative clause which follows, which would mean that there was some power under whose orders Eratosthenes acted ('. . . a stronger power than the very one by which it was ordered to him . . . '). This seems to contrast suspiciously sharply with the point Lysias endeavoured to make in the previous paragraphs. Some editors have tried to remove this seeming paradox by expunging *αὐτῆς* (Dobree) or by amending it into *αὐτῶν* (Baiter and Sauppe). If one accepts such emendations, the relative pronoun would unambiguously be interpreted as referring to *ἀρχή*. This noun would point to a generic referent but clearly distinct from the Thirty. The relative clause would

immediately be interpreted as a perfectly grammatical 'counterfactual' clause (relative clauses of this kind regularly require a historical tense without *ἄν*; cf. Humbert 1960: 241): 'if there had been in the city a stronger power, by which it was ordered to him, etc. [but there was none]'. Reiske's amendment *ταύτης* (adopted by Carey) does not seem a substantial improvement on the transmitted text, and only appears to contribute a pronoun which is more unambiguously demonstrative but which may still be cataphoric and anticipate a relative clause (cf. sentence 18).

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 4.

		Reanalyses (reading)		
Sentence	Constituent	Syntactic	Referential	Semantic
(46) (Lys. 12.6)	*τιμωρεῖσθαι*	×		
(26) (Lys. 12.26)	*ὑμῶν*	×		
(27) (Lys. 12.28)	*τῶν γεγενημένων*	×		
(42) (Lys. 12.45)	*τῶν παρόντων κακῶν*	×		
	Total:	4	Sample size:	2438 words

5.4.3 D. 22.1–33

Let us start from two interesting cases:

(63) *τῇ τε πόλει βοηθεῖν οἴεται δεῖν.*
'He thinks he must assist the city.' (D. 22.1)

The most immediate incremental parse of this sentence would interpret *βοηθεῖν* as dependent on *οἴεται*, in which case *δεῖν* would be surprising. In the extant Classical Greek texts up to the fourth century BC, *οἴεται δεῖν* as a collocation occurs thirty-seven times. In four cases, it is preceded by an infinitive governed by *δεῖν*. The reverse order (*δεῖν οἴεται*) occurs only once. Infinitives preceding *οἴεται* and depending directly on it occur nine times. Most importantly, all such occurrences are found in a clause-final position: *οἴεται* seems to govern infinitives which precede it only when it is the last word in a clause, which would be prosodically marked. A similar picture emerges with

the imperfect *ᾤετο*, both with *δεῖν* and with *χρῆναι*: *ᾤετο δεῖν* appears forty-five times (most of which are in Demosthenes), in nine of which it is (not necessarily immediately) preceded by an infinitive governed by *δεῖν*. The reverse order appears only once. Similarly, *ᾤετο χρῆναι* appears nine times (mostly in Xenophon). In four such occurrences, this phrase is preceded by an infinitive governed by *χρῆναι*. The reverse order never appears. Infinitives other than *δεῖν* or *χρῆναι* immediately precede and are governed by *ᾤετο* six times. In these cases, *ᾤετο* is followed either by a subordinate clause (once), or by a coordinate clause (once), by a Wackernagel boundary (once), or is at the end of a subordinate clause (once). It occurs twice that arguments of the infinitive appear right after *ᾤετο*, and the clause ends immediately afterwards. Preposed infinitives are governed by *δεῖν* following *ᾤετο* five times, and twice by *χρῆναι* following *ᾤετο*. In one case, the infinitive preceding *ᾤετο* is governed by *τολμῆσαι* instead (D. 32.9). In the corpus surveyed in this 'experiment', the same pattern shows up with other persons of *οἶμαι* as well (*πολεμεῖν ᾠόμεθα δεῖν*, D. 9.25; *εἰπεῖν* [. . .] *οὐκ οἴονται δεῖν ἡμᾶς*, Isoc. 6.5; *τυραννεῖν ᾠήθη δεῖν*, Isoc. 9.26). Judging from these figures, one would be inclined to believe that, in the absence of a prosodic boundary right after *οἴεται*, which would determine a clause-final intonation pattern, it is likely that a hearer would have expected *δεῖν* to appear and be the governor of *βοηθεῖν*. Unfortunately, this would be confirmed only by a quantitative study based on a truly representative corpus of Attic.

(64) *ἔστι δὴ πρὸς ταῦτ᾽ οὐ χαλεπὸν τὰ δίκαι᾽ ὑμῖν ἀντειπεῖν.*
'It is not difficult for you to oppose the right arguments to these.' (D. 22.9)

In this sentence, *ὑμῖν* modifies the predicate *ἔστι χαλεπόν* but is dangerously far from it and close to *ἀντειπεῖν*, which can govern a dative ('contradict someone'). The construction with the dative is in complementary distribution with that with *πρός*, but the position of *ὑμῖν* might induce an interference effect. Moreover, the dative is found in transitive constructions ('object something to someone'; cf. *ὥστε σέ τέ μοι μαρτυρεῖν καὶ τοῦτον αὐτὸν μηδὲν ἀντειπεῖν ἐμοί*, Ar. *Ec.* 569–70). On the other hand, the very fact that *τὰ δίκαια* is part of a hyperbaton (it is separated from its governor *ἀντειπεῖν* by a 'non-head X'; see 4.3.5, Figure 4.2, type (c3)) would suggest that this noun phrase is pragmatically (and, perhaps, intonationally) marked. In this sentence, *ταῦτα* refers to the arguments

that the speaker anticipates that his opponent will adduce in his defence (D. 22.8); if *τὰ δίκαια* contrasts with this piece of information, it might be argued that it would 'reactivate' *πρὸς ταῦτα* at this stage in the sentence, which would lead *ὑμῖν* to be interpreted as the notional subject of *ἀντειπεῖν* (one may compare a clause like *ἄσσα δέ σφι ποιέειν οὐκ ἔξεστι*, Hdt. 1.138, where the dative of a personal pronoun is distant from the impersonal verb which governs it, but it precedes the infinitive of which it is the notional subject).

(65) *Μειδίου κατηγοροῦντος τῆς βουλῆς καὶ ἄλλων τινῶν.*
'As Meidias accused the Council, together with others . . .' (D. 22.10)

The conjunction of a coordinate element to one preceding a verb of which they are both arguments is fairly common. Here, however, *καὶ ἄλλων τινῶν* happens to be in the same inflexional case as the other argument of the verb, *τῆς βουλῆς*, which interferes. In principle, prosody could disambiguate between near (*τῆς βουλῆς καὶ ἄλλων τινῶν*) and far (*Μειδίου καὶ ἄλλων τινῶν*) attachment; whether this would be disrupted by the failure of number agreement between *καὶ ἄλλων τινῶν* and *κατηγοροῦντος* is a question which we lack sufficient comparative evidence to address.

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 7.

		Reanalyses (reading)		
Sentence	Constituent	Syntactic	Referential	Semantic
(23) (D. 22.6)	*ποιεῖν*	×		
(3) (D. 22.11)	*ὅ* (*δίκαιον*)	×		
(3) (D. 22.11)	*δίκαιον*	×		
(3) (D. 22.11)	*ἣν*	×[12]		×
(3) (D. 22.11)	*εὑρεῖν*	×		
(24) (D. 22.15)	*ἀποστεῖλαι*	×		
	Total:	7	Sample size:	2447 words

5.4.4 Antipho 1

This speech presents no reconstructible difficulties for either listeners or readers. Sentence (33), in the absence of overt prosodic cues, is globally ambiguous, and sentence (47) contains a Wackernagel boundary preceding a one-word constituent.

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 0.

5.4.5 D. 9.1–40

The only remarkable sequence in this sample is contained in sentence (7) discussed above—an uncertain case which we are not in the position to evaluate in a meaningful way.

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 0.

5.4.6 D. 15

The only structure in this speech that could be ambiguous for both listeners and readers is contained in sentence (17), but it cannot be evaluated at our present state of knowledge (cf. 5.4.1). Sentence (22) would be globally ambiguous in the absence of overt prosodic cues.

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 0.

5.4.7 Hyp. 6

Once again, the only potential difficulty in this speech is one related to a relative pronoun whose antecedent is ambiguous: see sentence (16); cf. 5.4.1.

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 0.

5.4.8 Pl. *Ap.* 17a–24a4

(66) *ἔπειτά εἰσιν οὗτοι οἱ κατήγοροι πολλοὶ καὶ πολὺν χρόνον ἤδη κατηγορηκότες, ἔτι δὲ καὶ ἐν ταύτῃ τῇ ἡλικίᾳ λέγοντες πρὸς ὑμᾶς ἐν ᾗ ἂν μάλιστα ἐπιστεύσατε, παῖδες ὄντες ἔνιοι ὑμῶν καὶ μειράκια, ἀτεχνῶς ἐρήμην κατηγοροῦντες ἀπολογουμένου οὐδενός.*

'Then, these accusers are many and have been making accusations for a long time already, besides speaking to you also at this age, when you would have believed the most, some of you being children and adolescents, just accusing by default without anybody speaking in defence.' (Pl. *Ap.* 18c4–8)

The semantic subject of *κατηγοροῦντες* is *οὗτοι*, and this participle belongs syntactically to the main clause. However, *ὄντες* intervenes, whose semantic subject is *παῖδες*, and which belongs to the relative clause. Syntactic and referential reanalysis would be immediate, owing to the semantics of *κατηγοροῦντες*.

(67) *ὧν ἐγὼ οὐδὲν οὔτε μέγα οὔτε μικρὸν πέρι ἐπαΐω.*

'About which things I know nothing, either big or small.' (Pl. *Ap.* 19c4–5)

The initial relative pronoun depends on *πέρι* but might be understood as a predicative genitive dependent on *οὐδέν* ('none of which'). Sequences where initial *ὧν* is followed by a pronoun and *οὐδέν* are not hard to find in Attic prose. In quite a few instances, initial *ὧν* is an argument of a verb which appears further on in the clause (e.g. *ὧν ὑμῖν οὐδὲν πώποτ' ἐμέλησεν*, Isoc. 8.115, 15.303, *εἰς τοὺς θεωμένους ἢ εἰς τοὺς παιδαγωγούς, ὧν οὐδεὶς οὐδὲν κατηγορεῖ*, Antipho 3.3.7, *ἐγένετό θ' ὑμῖν ὧν ἐγὼ οὐδὲν δέομαι μεμνῆσθαι*, And. 1.80—see MacDowell 1962: 119 on textual problems in this passage—*ὧν οὗτος οὐδὲν ἐνθυμούμενος*, D. 26.18). A counterexample, with *ὧν* as a partitive which depends on *οὐδέν*, is *ὧν ὑμῖν οὐδὲν ἀποβέβηκεν* (Lys. 28.14). An early interpretation of *ὧν* as a partitive was indeed possible but could probably be prevented by the insertion of a prosodic boundary (after *ἐγώ*?) indicating that the relative pronoun should not be attached to a near constituent. In the absence of such a prosodic cue readers could be misled and would probably need to reanalyse the pronouns syntactically and semantically. On the rarity of postposed *πέρι* in everyday Attic see Aristotle, *Poetics* 1458b31–1459a1.

(68) *οὐχ ὡς ἀτιμάζων λέγω τὴν τοιαύτην ἐπιστήμην.*

'And I am speaking not bringing dishonour upon such knowledge.' (Pl. *Ap.* 19c5–6)

The accusative *τὴν τοιαύτην ἐπιστήμην* is the object of *ἀτιμάζων*, not of *λέγω*; in this case, prosody would probably disambiguate between near and far attachment. In the absence of overt prosodic cues the sentence would be globally ambiguous.

(69) *τούτων γὰρ ἕκαστος, ὦ ἄνδρες, οἷός τ᾽ ἐστὶν ἰὼν εἰς ἑκάστην τῶν πόλεων τοὺς νέους—οἷς ἔξεστι τῶν ἑαυτῶν πολιτῶν προῖκα συνεῖναι ᾧ ἂν βούλωνται—τούτους πείθουσι τὰς ἐκείνων συνουσίας ἀπολιπόντας σφίσιν συνεῖναι χρήματα διδόντας καὶ χάριν προσειδέναι.*

'Each of these men [*sc.* the sophists], gentlemen, travelling to each city as much as he can, convinces the young—to whom it is possible to associate for free with whoever they may wish among their fellow citizens—they convince these to associate with them, having given up the association with those men, for money, and to be grateful besides.' (Pl. *Ap.* 19e4–20a2)

I have already discussed this sentence at 4.4.2. The plural demonstrative pronoun *οὗτοι* refers first to the sophists, then to the young, but before the latter occurrence, a relative clause appears where both *οἷς* and *ἑαυτῶν* refer to the young. Moreover, *οἱ νέοι* is the implied subject of the subsequent relative clause (*ᾧ ἂν βούλωνται*). The main verb, *πείθουσι*, is in the third person plural, just like *βούλωνται*. The agreement with *ἕκαστος* is *ad sensum*. Arguably, the chances are that *οἱ νέοι* would still be perceived as the subject of *πείθουσι* and that *τούτους* might have turned out to be interpreted as referring to 'the sophists', as initial *τούτων*, rather than 'the young'. If this were the case, it would have to be reanalysed referentially. As we have seen (4.4.2), these ambiguities could be compensated by gestures in oral recitation, especially when the entities referred to by the demonstratives were physically present. This would be the case, for instance, with the following passage of Antiphon (6.28):

ἐπίσταμαι δὲ καὶ τάδε, ὦ ἄνδρες, ὅτι εἰ μὲν τούτοις (the accusers) *ἐμοῦ κατεμαρτύρουν οἱ μάρτυρες οἱ παραγενόμενοι, αὐτοῖς ἂν τούτοις* (the witnesses) *ἰσχυροτάτοις ἐχρῶντο καὶ πίστιν ταύτην σαφεστάτην ἀπέφαινον, τοὺς μάρτυρας τοὺς καταμαρτυροῦντας· τῶν αὐτῶν δὲ τούτων* (the witnesses) *μαρτυρούντων, ἃ μὲν ἐγὼ λέγω, ἀληθῆ εἶναι, ἃ δὲ οὗτοι* (the

accusers) *λέγουσιν, οὐκ ἀληθῆ, τοῖς μὲν μάρτυσι τοῖς μαρτυροῦσιν ἀπιστεῖν ὑμᾶς διδάσκουσι, τοῖς δὲ λόγοις οἷς αὐτοὶ λέγουσι πιστεύειν ὑμᾶς φασι χρῆναι, οὓς ἐγὼ εἰ ἔλεγον ἄνευ μαρτύρων, ψευδεῖς ἂν κατηγόρουν εἶναι.*

'I also know this, gentlemen, that if the witnesses who were present were giving testimony on their side against me, they would consider this very strong evidence, and they would display the testimony of these witnesses against me as clear confirmation of their case. But when these same witnesses testify that what I say is true and what they say is not true, they now tell you not to trust the witnesses who are testifying and say you should trust the arguments they make instead, though if I made such arguments without witnesses, they would accuse me of lying.' (transl. M. Gagarin)

In the context of *anagnosis* which we may envisage for a text like Plato's *Apology of Socrates* (see 3.4.2) gestures may be limited at most to abstract deixis (4.4.2); furthermore, if the speech were a real one, the entities to which Socrates refers in this passage (the sophists and the young) would probably not be present as a group that could be pointed at in the tribunal, and the speaker would probably have the chance to disambiguate between them only using abstract deixis. If a non-naïve reader used this disambiguating strategy, listeners could probably be guided to the right interpretation of the demonstratives.

Reconstructible reanalyses (listening): 2.

		Reanalyses (listening)		
Sentence	Constituent	Syntactic	Referential	Semantic
(66) (Pl. *Ap.* 18c4–8)	*κατηγοροῦντες*	×	×	
	Total:	2	Sample size:	2409 words

Reconstructible reanalyses (reading): 5.

		Reanalyses (reading)		
Sentence	Constituent	Syntactic	Referential	Semantic
(66) (Pl. *Ap.* 18c4–8)	*κατηγοροῦντες*	×	×	
(67) (Pl. *Ap.* 19c4–5)	*ὧν*	×		×
(69) (Pl. *Ap.* 19e4–20a2)	*τούτους*		×	
	Total:	5	Sample size:	2409 words

5.4.9 Antipho 4

(70) *νενόμισται μὲν ὀρθῶς τὰς φονικὰς δίκας περὶ πλείστου τοὺς κρίνοντας ποιεῖσθαι διώκειν τε καὶ μαρτυρεῖν κατὰ τὸ δίκαιον* (Antipho 4.1.1).

'It is rightly established that those who judge cases of murder consider [it] of the highest importance to prosecute and give evidence according to justice.'

Let us reconstruct the incremental parsing of this sentence. First of all, the impersonal verb sets up the expectation for an infinitive:

νενόμισται μὲν ὀρθῶς → Inf_a

This expectation is reinforced by this noun phrase in the accusative:

τὰς φονικὰς δίκας → → Inf_a

The subsequent phrase (*περὶ πλείστου*) further strengthens the expectation for an infinitive. Table 5.4 below displays the occurrences of this phrase for each verb it modifies in Classical Greek up to the fourth century—as is relevant to this 'experiment'—and in later Greek up to the third century AD. It is very likely that this phrase would anticipate a form of *ποιοῦμαι*:

περὶ πλείστου → → Inf_a (*ποιοῦμαι*)

The substantivized participle *τοὺς κρίνοντας* would be interpreted as an argument (maybe the subject) of the expected infinitive. Possibly, *τὰς δίκας* could also be interpreted as the object of this participle. Since an infinitive of *ποιοῦμαι* is predicted, and when construed

Table 5.4. Verbs modified by *περὶ πλείστου* in Classical and post-Classical Greek

	Class. (up to 4th cent. BC)	Hellen./Roman (3rd cent. BC–3rd cent. AD)
ἡγοῦμαι	1 (Thucydides)	–
μελετῶ	1 (Thucydides)	–
ποιοῦμαι	46	42
ἄγω	1 (Herodotus)	1 (Diodorus Siculus)
εἰμί	6 (4 × Antiphon, 1 × Andocides, 1 × Plato)	1 (Josephus)

In Byzantine Greek, besides *ποιοῦμαι*, *περὶ πλείστου* is used with *ἡγοῦμαι*, *ἄγω*, *εἰμί*, *νομίζω*, *ἔχω*, *σκοποῦμαι*, *γίγνομαι*, *σπουδάζω*, and quite often with *τίθημι*.

with *περὶ πλείστου* this verb requires a direct object, *τὰς δίκας* would be interpreted as a common direct object to both verbs.

τοὺς κρίνοντας → → Inf_a

The infinitive *ποιεῖσθαι* satisfies all expectations. Up to this point, the sentence would be interpreted as meaning 'It is rightly established that those who judge [them] regard the cases of murder as most important.' At this stage, *διώκειν* would be completely unexpected, and it seems unlikely that it would be interpreted immediately as the object of *ποιεῖσθαι*: both are unarticulated present infinitives and could rather be interpreted as coordinate to one another. This would call for syntactic and semantic reanalysis. However, it is possible that prosody indicated that the phrase headed by *ποιεῖσθαι* was not yet complete and that the verb still required an argument to be expressed.

(71) *ἀποκτεῖναι ὑμᾶς με πείθοντες.*
'Persuading you to kill me.' (Antipho 4.2.7)

Gagarin's (1997: 167) comment on this passage reads: 'the interlocking word order is confusing—perhaps intentionally so'. Leaving aside the question of intentionality, he is absolutely right. As it stands, it is likely that *ὑμᾶς* would have been interpreted as the object of *ἀποκτεῖναι*, and *με* as that of *πείθοντες*, which would give the opposite meaning to the intended one. Both accusatives must be reanalysed syntactically (see Appendix A.4 on the government pattern of verbs of commanding).

(72) *καὶ τῶν ἄλλων ἁπάντων τῶν κατηγορουμένων ἀπολύεται τῆς αἰτίας.*
'He is acquitted of the charge of all the other accusations, too.' (Antipho 4.4.2)

The early genitive *τῶν ἄλλων ἁπάντων τῶν κατηγορουμένων* could be interpreted as an argument of *ἀπολύεται* ('he is also cleared of all the other accusations'), with *τῆς αἰτίας* remaining pending and inducing the syntactic reanalysis of the previous genitive. A prosodic boundary separating it from the verb would bias the listeners towards far attachment.

(73) *θέλω δὲ καὶ τἆλλα παραπλήσια ἀπολογηθέντα τούτοις ἐπιδεῖξαι αὐτόν.* (Antipho. 4.3.1) = (sentence 34)

The deponent verb *ἀπολογέομαι* virtually always takes the person as its subject in extant fifth- and fourth-century Attic and is often used transitively with the accusative of the thing said in one's defence. This pattern also applies to its 'passive' tenses. The aorist passive of this verb occurs only five times in Greek before Polybius and always governs the nominative of the person. The perfect passive appears in an impersonal construction once in Andocides (*ἀπολελόγηταί μοι ἱκανῶς*, 1.70) and once with the thing said as its subject (*ταῦτα δή, ἔφην, ἀπολελογήσθω ἡμῖν*, Pl. *R.* 607b1). Elsewhere, it shows the same construction as the other tenses. If these data came from a representative corpus of natural Attic usage, we could infer that it is unlikely that a native speaker would have interpreted *ἀπολογηθέντα* as a neuter plural referring to *τἆλλα*, which would generate ambiguity and make *αὐτόν* unexpected (in this case the sentence would be interpreted as 'I wish to show that the other things similar to these have been alleged'). However, as with other cases of morphological ambiguity, we may safely posit a chance-level correct interpretation of the participle as an accusative singular masculine referring to *αὐτόν*.

(74) *τὸν μὲν καθαρὸν ὑμέτερον ἡγεῖσθε εἶναι ἀπολύειν τῆς αἰτίας.*
'You should think that it is your duty to acquit of the charge the innocent.' (Antipho 4.4.11)

Here the infinitive *εἶναι* would interfere with *ἀπολύειν* as the attachment site for the accusative *τὸν καθαρόν*, to which it is closer in the linear order of the sentence; probably, the accusative would have been interpreted as the subject of *εἶναι* ('think that the innocent is yours'). Unexpected *ἀπολύειν* would induce the reanalysis of *καθαρόν* as its direct object (syntactic and semantic reanalysis). Moreover, *ὑμέτερον* would need to be reanalysed as neuter and referring to *ἀπολύειν* instead of *τὸν καθαρόν*. Far attachment of *τὸν καθαρόν* to *ἀπολύειν* is a matter of 'grouping', and prosody could probably guide listeners to the correct interpretation; it remains true that the intervening infinitives may interfere, and that the interpretation of *ὑμέτερον* as masculine may be primed by *τὸν καθαρόν*.

Reconstructible reanalyses (listening): 2.

		Reanalyses (listening)		
Sentence	Constituent	Syntactic	Referential	Semantic
(71) (Antipho 4.2.7)	*ὑμᾶς*	×		
(71) (Antipho 4.2.7)	*με*	×		
	Total:	2	Sample size:	1928 words

Reconstructible reanalyses (reading): 11.

		Reanalyses (reading)		
Sentence	Constituent	Syntactic	Referential	Semantic
(70) (Antipho 4.1.1)	*τὰς φονικὰς δίκας*	×		
(70) (Antipho 4.1.1)	*διώκειν*	×		×
(71) (Antipho 4.2.7)	*ὑμᾶς*	×		
(71) (Antipho 4.2.7)	*με*	×		
(34) (Antipho 4.3.1)	*παραπλήσια*	×		
(72) (Antipho 4.4.2)	*τῶν . . . κατηγορουμένων*	×		
(74) (Antipho 4.4.11)	*τὸν καθαρόν*	×		×
(74) (Antipho 4.4.11)	*ὑμέτερον*		×	×
	Total:	11	Sample size:	1928 words

5.4.10 Isoc. 6.1–45

The potentially ambiguous sequences contained in this sample have been discussed above (sentences 5, 8–9, 13–15, 28). As we have seen, most of them involve the attachment of relative clauses and are impossible to evaluate conclusively.

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 2.

		Reanalyses (reading)		
Sentence	Constituent	Syntactic	Referential	Semantic
(28) (Isoc. 6.18)	*αὐτῶν*	×		
(5) (Isoc. 6.32)	*ὅνπερ*		×	
	Total:	2	Sample size:	2468 words

5.4.11 Isoc. 7.1–47

(75) *διαγνῶναι ποτέραν ἄν τις δέξαιτο τῶν μερίδων τούτων τοῖς παισὶ τοῖς αὑτοῦ καταλιπεῖν.*

'To decide which of these parts one might accept to leave to his own children.' (Isoc. 7.5)

The initial verb anticipates either a direct object or a substantive clause:

διαγνῶναι → Object_a

The interrogative pronoun reveals that the object of *διαγνῶναι* is a clause and anticipates both a partitive and a transitive verb. The pronoun *τις* in the nominative reveals that *ποτέραν* is a pronoun, not an adjective.

ποτέραν ἄν τις → V_a, Partitive_a

The verb *δέξαιτο* is transitive and would be interpreted as the governor of *ποτέραν*. It might take a dative as an optional argument ('at someone's hands').

δέξαιτο → $[N_a]$ $\{\text{Partitive}_a\}$

The subsequent partitive is highly expected, and the noun phrase in the dative might be construed with *δέξαιτο*, at which stage all expectations would be satisfied:

τῶν μερίδων τούτων $\{[N_a]\}$
τοῖς παισὶ τοῖς αὑτοῦ

The infinitive *καταλιπεῖν* would be unexpected and would induce the syntactic reanalysis of *ποτέραν* and the dative. Conceivably, however, the insertion of a prosodic boundary between *δέξαιτο* and *τῶν μερίδων τούτων* could indicate that the newly encountered constituents should be attached to some other governor to follow, and the partitive could still be integrated with *ποτέραν*, by which it is strongly anticipated.

(76) *ταύτῃ καὶ τοὺς νόμους καὶ τοὺς ῥήτορας καὶ τοὺς ἰδιώτας ἀναγκαῖόν ἐστιν ὁμοιοῦσθαι, καὶ πράττειν οὕτως ἑκάστους οἵαν περ ἂν ταύτην ἔχωσιν.*

'It is necessary that the laws, the public speakers and the private citizens conform to it [*sc.* the constitution], and that everyone fare according to what sort of constitution they should have.' (Isoc. 7.14)

The earliest possible governor of *ταύτῃ* is *ἀναγκαῖόν ἐστιν*. With this interpretation, *ταύτῃ* (*sc. ἡ πολιτεία*) would also become the notional subject of *ὁμοιοῦσθαι*, a verb that can be used transitively in the middle ('it is necessary for this to compare the laws, etc.'). The implausible semantics would trigger the reanalysis of *ταύτῃ* as an argument of *ὁμοιοῦσθαι* and the ascription of volitionality to the entities referred to by the accusatives (cf. Allan 2003: 88), which (as a group) would be reinterpreted as the subject (the agent/experiencer) of the reflexive verb. Once again, a prosodic boundary preceding *ἀναγκαῖόν ἐστιν* could resolve this 'grouping' ambiguity and favour the attachment of both *ταύτῃ* and the accusatives to *ὁμοιοῦσθαι*.

(77) *τοιοῦτο μνημεῖον ἐν τῷ τόπῳ τῆς αὑτῶν ἀρετῆς καὶ σωφροσύνης ἐγκατέλιπον.*

'They left such a monument, in that place, of their own virtue and wisdom.' (Isoc. 7.38)

Here, it is possible that *τῆς αὑτῶν ἀρετῆς καὶ σωφροσύνης* could be interpreted as genitives modifying *τῷ τόπῳ*. In the classical authors, genitives modifying *τόπος* ('place') normally have partitive semantics indicating where the 'place' belongs (as in *τόπος τῆς οἰκουμένης*), rather than 'pertinentive' ones (see Schwyzer and Debrunner 1950: 117) indicating what belongs in the 'place' ('place of something' = 'place where something is/happened'). Incidentally, the phrase *τόπος τῆς ἀρετῆς* is found only in Christian texts (for instance, *ἀπὸ τοῦ τόπου τῆς ἀρετῆς εἰς τὸν τῆς κακίας* in Olymp. Diaconus, *Comm. in Lamentationes* 93.725.48, sixth century). However, a prosodic boundary after *ἐν τῷ τόπῳ* would probably indicate far attachment.

(78) *τὴν δὴ τοιαύτην, ὥσπερ εἶπον, κυρίαν ἐποίησαν τῆς εὐταξίας ἐπιμελεῖσθαι, ᾗ τοὺς μὲν οἰομένους ἐνταῦθα βελτίστους ἄνδρας γίγνεσθαι, παρ᾽ οἷς οἱ νόμοι μετὰ πλείστης ἀκριβείας κείμενοι τυγχάνουσιν, ἀγνοεῖν ἐνόμιζεν.*

'Such a thing, as I said, they put in charge of taking care of discipline, which considered that those who believed that there is [a place] where men are better, where [lit. among whom] the laws happen to be fixed with the greatest precision, were wrong.' (Isoc. 7.39)

A prosodic boundary would be needed to prevent *εὐταξίας* from being construed with *κυρίαν* ('in charge of discipline') and being

reanalysed when *ἐπιμελεῖσθαι* is encountered. The fact that *εὐταξίας* is a closer possible antecedent of the relative pronoun *ἥ* than *τοιαύτην* should not be regarded as definitely problematic. On the same issue with the attachment of *παρ' οἷς* see sentence (12) above.

(79) *οὐ γὰρ τοῖς ψηφίσμασιν ἀλλὰ τοῖς ἤθεσι καλῶς οἰκεῖσθαι τὰς πόλεις, καὶ τοὺς μὲν κακῶς τεθραμμένους καὶ τοὺς ἀκριβῶς τῶν νόμων ἀναγεγραμμένους τολμήσειν παραβαίνειν, τοὺς δὲ καλῶς πεπαιδευμένους καὶ τοῖς ἁπλῶς κειμένοις ἐθελήσειν ἐμμένειν.*

'For it is not because of the decrees, but because of morals that the cities are well directed, and badly reared people will dare to transgress even those laws that are recorded with great precision, whereas well educated people will be disposed to obey even those that are laid out in a simple manner.' (Isoc. 7.41)

The partitive genitive *τῶν νόμων* appears in attributive position, which is abnormal (cf. Schwyzer and Debrunner 1950: 115 and Rijksbaron et al. 2000: 24 and 35). The partitive itself is necessary to disambiguate between the referents indicated by the substantivized participles, which are morphologically identical (*τοὺς μὲν κακῶς τεθραμμένους* [*ἀνθρώπους*], *τοὺς ἀκριβῶς τῶν νόμων ἀναγεγραμμένους*). As a matter of fact, *νόμους* could have been used as a direct object, with attributive *ἀναγεγραμμένους* as its modifier (*τοὺς ἀκριβῶς ἀναγεγραμμένους* [*νόμους*]). This, however, would have prevented the homoeoteleuton effect produced by the actual phrasing—it would appear that in this sentence ornamentation prevails over *sapheneia*. Here, *τοὺς μὲν κακῶς τεθραμμένους* could have primed another substantivized participle, and it is likely that *τῶν νόμων* would have set up the expectation for a verb which can govern a genitive. Had one verb of this kind occurred, the genitive would have been attached directly to it (as in *τοὺς τῶν νόμων μιμνήσκοντας*, for instance). Since *ἀναγράφω* violates this expectation, *τῶν νόμων* must be reanalysed as an adjunct to a substantival expression instead of as an argument of a verb.

Reconstructible reanalyses (listening): 1.

		Reanalyses (listening)		
Sentence	Constituent	Syntactic	Referential	Semantic
(79) (Isoc. 7.41)	*τῶν νόμων*			×
	Total:	1	Sample size:	2469 words

Reconstructible reanalyses (reading): 9.

		Reanalyses (reading)		
Sentence	Constituent	Syntactic	Referential	Semantic
(75) (Isoc. 7.5)	*ποτέραν*	×		
(75) (Isoc. 7.5)	*τοῖς παισί*	×		
(76) (Isoc. 7.14)	*ταύτῃ*	×		
(76) (Isoc. 7.14)	*τοὺς νόμους, κτλ.*			×
(77) (Isoc. 7.38)	*τῆς αὑτῶν ἀρετῆς*	×		×
(78) (Isoc. 7.39)	*τῆς εὐταξίας*	×		
(4) (Isoc. 7.40)	*τίθεσθαι*	×		
(79) (Isoc. 7.41)	*τῶν νόμων*			×
	Total:	9	Sample size:	2469 words

5.4.12 Th. 2.35–46

(80) *ἐμοὶ δὲ ἀρκοῦν ἂν ἐδόκει εἶναι ἀνδρῶν ἀγαθῶν ἔργῳ γενομένων ἔργῳ καὶ δηλοῦσθαι τὰς τιμάς, οἷα καὶ νῦν περὶ τὸν τάφον τόνδε δημοσίᾳ παρασκευασθέντα ὁρᾶτε, καὶ μὴ ἐν ἑνὶ ἀνδρὶ πολλῶν ἀρετὰς κινδυνεύεσθαι εὖ τε καὶ χεῖρον εἰπόντι πιστευθῆναι.*

'To me, it would have seemed to be sufficient that of men who became good in action, with action be also shown the honours, such as you see right now with this public funeral, and that the risk should not be run, at the hands of one man only, that the virtues of many be believed according as he speaks well or poorly.' (Th. 2.35.1)

A potential ambiguity can be detected at the very beginning of this sentence: *ἐμοί* depends on *ἐδόκει*, but *ἀρκοῦν* can govern a dative as well. If the shorter attachment were preferred, the clause would come to mean 'it would have seemed to be sufficient to me that, etc.', a counterfactual which implies the opposite ('but it does not [seem sufficient to me]'). According to Wackernagel's law, the position of *ἄν* entailed that a prosodic boundary followed *ἐμοὶ δέ*. As we have seen, boundaries can prevent the immediate attachment of the constituents that they separate, and it is likely that the initial dative would be left unintegrated until the next candidate governor is encountered.

(81) *νομίζων ἐπί τε τῷ παρόντι οὐκ ἂν ἀπρεπῆ λεχθῆναι αὐτὰ καὶ τὸν πάντα ὅμιλον καὶ ἀστῶν καὶ ξένων ξύμφορον εἶναι ἐπακοῦσαι αὐτῶν.*

'Thinking that on the present occasion it would not be inappropriate that these things should be said, and that it is profitable for the entire assemblage of both citizens and foreigners to listen to them.' (Th. 2.36.4)

In this sentence an infinitive is anticipated by *καί* and the subsequent accusative *τὸν πάντα ὅμιλον* (which cannot plausibly be interpreted as a coordinate subject of *λεχθῆναι*). A prosodic boundary should prevent listeners from interpreting this noun phrase as an argument of *εἶναι* and favour far attachment to the subsequent infinitive *ἐπακοῦσαι*. Just as in the analogous case of sentence (74), we may note the theoretical possibility that the neuter adjective *ξύμφορον* be interpreted as a masculine as a result of priming (by *ὅμιλον*).

(82) *κατὰ δὲ τὴν ἀξίωσιν, ὡς ἕκαστος ἔν τῳ εὐδοκιμεῖ, οὐκ ἀπὸ μέρους τὸ πλέον ἐς τὰ κοινὰ ἢ ἀπ' ἀρετῆς προτιμᾶται.*

'As regards public esteem, according to what one is distinguished in, not by rotation rather than virtue, one is preferred for public office.' (Th. 2.37.1)

(83) *πιστεύοντες οὐ ταῖς παρασκευαῖς τὸ πλέον καὶ ἀπάταις ἢ τῷ ἀφ' ἡμῶν αὐτῶν ἐς τὰ ἔργα εὐψύχῳ.*

'Trusting not in preparations and deceit more than in our very own courage for the actions [to take action].' (Th. 2.39.1)

In these cases, difficulty might potentially stem from the usage of *τὸ πλέον* 'the most part'. This collocation (that is, the exact sequence '*τὸ πλέον*') is found either when *πλέον* is an adjective modifying a noun (as in *τὸ πλέον μέρος*), or when *πλέον* is substantivized, in which case it often governs a partitive genitive (*τὸ πλέον τοῦ στρατεύματος*), or as an adverbial phrase meaning 'for the most part'. Here, Thucydides uses it adverbially, with an object of comparison introduced by *ἤ* ('more than'). In a few cases (Th. 1.42.4, 2.101.1, Pl. *Grg.* 483c4–5, 7, 489a3, *Lg.* 781b3, X. *Cyr.* 1.3.18, Isoc. 12.244), *πλέον* is preceded by the article only because it is used adverbially and modifies an articular infinitive. Table 5.5 shows the distribution of the occurrences of *τὸ πλέον* in fifth- and fourth-century writers.

Table 5.5. *τὸ πλέον* in fifth- and fourth-century Greek

	Adjective	Substantivized	Substantivized, with partitive	Substantivized, in prepositional phrase (*ἐ(ἰ)ς/πρὸς/ἐπὶ τὸ πλέον*)	Adverbial (absolute)	Adverbial (comparative)
Herodotus			1		1	
Euripides	1	2	1			
Thucydides		1	6	5	9	13*
Xenophon		1		1		2**
Plato		7				
Demosthenes		1				
Aeschines				1		

* Immediately followed by *ἤ*: 7; followed by *ἤ*, with a verb intervening: 4; followed by *ἤ*, with another constituent intervening: 2.
** Immediately followed by a genitive: 1; followed by *ἤ*, with another constituent intervening: 1.

Judging from these figures, it appears that Thucydides was particularly fond of this usage of *τὸ πλέον*, which he often employed with an absolute meaning. The object of comparison is expressed only by *ἤ*, and it either follows *τὸ πλέον* immediately, or it occurs after a verb (for instance, *τοῖς σώμασι τὸ πλέον ἰσχύουσα ἢ τοῖς χρήμασιν*, 1.121.3). The only exceptions are the two passages discussed here (and one case in Xenophon: *ἀλλὰ μὴν ἀνδρείαν γε τὸ πλέον μετ' εὐβουλίας ἢ μετὰ κινδύνων ἐπεδείκνυτο, καὶ σοφίαν ἔργῳ μᾶλλον ἢ λόγοις ἤσκει*, *Ages.* 11.9). On these grounds, one may suspect that the default interpretation of *τὸ πλέον* in these passages would be as an absolute adverbial, which would make the object of comparison surprising in both cases. Unfortunately, in the absence of a representative corpus of natural Attic usage, we cannot conclude that this would have been the case above chance level.

(84) *καὶ οὐκ ἂν πολλοῖς τῶν Ἑλλήνων ἰσόρροπος ὥσπερ τῶνδε ὁ λόγος τῶν ἔργων φανείη.*

'And, not for many among the Greeks would praises appear equivalent to the actions, like theirs.' (Th. 2.42.2)

Here, the initial dative *πολλοῖς* requires a governor. The earliest option is *ἰσόρροπος*, an adjective meaning 'well balanced', which normally governs a dative. Such an immediate attachment would be avoided if the sentence were uttered with a prosodic boundary separating the phrase *πολλοῖς τῶν Ἑλλήνων* from the interfering adjective.

Let us now examine to what has been considered one of the hardest sentences in all of Greek literature. Rusten (1986) has devoted a full article to its interpretation. I will not repeat his arguments, which I generally accept (along with as his text) and apply both in my translation and in the discussion.

(85) *τῶνδε δὲ οὔτε πλούτου τις τὴν ἔτι ἀπόλαυσιν προτιμήσας ἐμαλακίσθη οὔτε πενίας ἐλπίδι, ὡς κἂν ἔτι διαφυγὼν αὐτὴν πλουτήσειεν, ἀναβολὴν τοῦ δεινοῦ ἐποιήσατο· τὴν δὲ τῶν ἐναντίων τιμωρίαν ποθεινοτέραν αὐτῶν λαβόντες καὶ κινδύνων ἅμα τόνδε κάλλιστον νομίσαντες ἐβουλήθησαν μετ' αὐτοῦ τοὺς μὲν τιμωρεῖσθαι, τῶν δὲ ἐφίεσθαι, ἐλπίδι μὲν τὸ ἀφανὲς τοῦ κατορθώσειν ἐπιτρέψαντες, ἔργῳ δὲ περὶ τοῦ ἤδη ὁρωμένου σφίσιν αὐτοῖς ἀξιοῦντες πεποιθέναι, καὶ ἐν αὐτῷ τὸ ἀμύνεσθαι καὶ παθεῖν μᾶλλον ἡγησάμενοι ἢ τὸ ἐνδόντες σῴζεσθαι,*

> *τὸ μὲν αἰσχρὸν τοῦ λόγου ἔφυγον, τὸ δ᾽ ἔργον τῷ σώματι ὑπέμειναν καὶ δι᾽ ἐλαχίστου καιροῦ τύχης ἅμα ἀκμῇ τῆς δόξης μᾶλλον ἢ τοῦ δέους ἀπηλλάγησαν.*
>
> 'Among them, neither anyone, preferring the further enjoyment of wealth, became cowardly, nor, for the hope, pertaining to poverty, that he might still even become rich escaping it, postponed the danger: taking the vengeance over the enemies as more desirable than those things, and considering at the same time this the best of the risks, they resolved, at this risk, on the one hand to win over these, on the other to wish for those things, committing to hope the uncertainty of future success, but resolving to rely on themselves in the action for what was by then before their eyes, and believing that in this there were [i.e. that this implied] resisting and suffering more than being safe having surrendered,[12] they fled from a disgraceful fame, but faced their task with their body, and at the same time, through the fortune of a moment, at the height of glory more than of fear, they passed away.' (Th. 2.42.4)

At the very beginning, *τῶνδε δὲ οὔτε πλούτου τις* shows a very similar pattern to that at the beginning of sentence (80): *ἐμοὶ δὲ ἀρκοῦν ἂν ἐδόκει, κτλ*. Here, we can posit a Wackernagel boundary on the basis of the position of *τις* (*τῶνδε δὲ* |$_{\text{O}}$ *οὔτε πλούτου τις*),[13] and this would prevent the immediate attachment of the constituents that they separate. On this account, the initial genitive would be left unintegrated at least until the next candidate governor (*τις*) is encountered. This boundary would not have been immediately inferred by a reader: the group consisting of the *colon*-initial constituent and the postpositive exceeds ten letters, and it is unlikely that it would be perceived holistically. In other words, the clitic

[12] The sequence *ἐν αὐτῷ τὸ ἀμύνεσθαι καὶ παθεῖν* is one of the most controversial parts of this sentence. Rusten convincingly interprets it as a verbless substantive clause, as if it were *ἐν αὐτῷ (ἐν)εἶναι τὸ ἀμύνεσθαι*.

[13] According to Scheppers (2011: 171), a prepositive like *οὔτε* does not count as a word occupying a 'position' for the purposes of identifying the beginning of a *colon* based on the second position of a clitic pronoun or the modal particle *ἄν*. In other words, if *τις* occurs in second position, the first position includes *πλούτου* as well as all preceding prepositives.

would be 'read' (and the boundary would be recognized) only after the sequence *οὔτε πλούτου* was first perceived and interpreted, which would not prevent readers from initially interpreting *τῶνδε* as a possessive modifier of *πλούτου* instead of a partitive to be constructed with *τις*.

Further on, the second instance of the adverb *ἔτι* should be correctly attached to *πλουτήσειεν* instead of adjacent *διαφυγών* if the participial clause *διαφυγὼν αὐτήν* were pronounced with parenthetical intonation. In this connection, we may note that a Wackernagel boundary could be placed before *διαφυγών*, as would be indicated by the position of (postpositive) anaphoric *αὐτήν*. Once again, both the *colon*-initial constituent and the postpositive are relatively long words, and it is not given that a reader would have perceived the postpositive at the same time as the constituent. On this account, a reader who would be led to posit a Wackernagel boundary between *ἔτι* and *διαφυγών* would also be automatically induced to detach *ἔτι* from the participle from a syntactic point of view.

Word order in the subsequent clauses is pretty linear, with an unproblematic discontinuity appearing at *σφίσιν αὐτοῖς ἀξιοῦντες πεποιθέναι*. A potentially (globally) ambiguous sequence is *ἅμα ἀκμῇ*: as Rusten points out, many interpretations, including that presented in the corresponding *scholion*, have taken for granted that *ἅμα* governs the subsequent dative. Rusten argues that this is not the case and that *ἅμα* is to be understood with the previous phrase. If this interpretation is correct, we can posit a prosodic boundary separating the two: *καὶ δι᾽ ἐλαχίστου καιροῦ τύχης ἅμα* |$_{\text{O}}$ *ἀκμῇ τῆς δόξης, κτλ.* As to *δι᾽ ἐλαχίστου καιροῦ τύχης*, interpreters have debated whether it is *καιροῦ* which governs *τύχης* or the opposite—see example (58) above. For our purposes, this question is completely irrelevant. The most immediate interpretation for a native speaker would have been determined by expectations deriving from his or her linguistic experience.

(86) *τὴν ὠφελίαν, ἣν ἄν τις πρὸς οὐδὲν χεῖρον αὐτοὺς ὑμᾶς εἰδότας μηκύνοι.*

'The advantage, about which one could speak at length to you who know it not worse yourself.' (Th. 2.43.1)

This relative clause is phrased in such a way as to induce a relatively high number of reanalyses in the absence of overt prosodic cues. The

relative pronoun in the accusative sets up the expectation for a transitive verb (or for an intransitive verb in the infinitive plus a finite verb that could govern it); *ἄν* removes the possibility that a present indicative should occur, and *τις* sets up the expectation for a finite mood. If all such expectations converge on one verb form, this may be expressed as follows:

ἣν ἄν τις → V_a

The preposition *πρός* sets up the expectation for a noun in the accusative, genitive, or dative—frequency in a corpus of natural Classical Attic usage would indicate which case would be most expected. This expectation would be satisfied by *οὐδέν*. As a phrase, *πρὸς οὐδέν* means 'in vain'.

πρὸς → N_a {V_a}
οὐδὲν {V_a}

At this stage, *χεῖρον* could be understood as an adverb ('worse'), but only if a prosodic boundary separated it from *οὐδέν*. If not, it would be understood as a modifier: 'for nothing worse'.

χεῖρον {V_a}

Since the direct object of the expected verb is already expressed by *ἥν*, the masculine accusative plural *αὐτούς* might raise the expectation for a verb which admits a double accusative construction. It might also be assigned 'the enemies' as a referent (the previous clauses in Thucydides' text read: *τοὺς δὲ λοιποὺς χρὴ ἀσφαλεστέραν μὲν εὔχεσθαι, ἀτολμοτέραν δὲ μηδὲν ἀξιοῦν τὴν ἐς <u>τοὺς πολεμίους</u> διάνοιαν ἔχειν, σκοποῦντας μὴ λόγῳ μόνῳ τὴν ὠφελίαν*).

αὐτοὺς → (?) V_b (?) $=^?$ {V_a}

It is likely that the accusative plural pronoun *ὑμᾶς* would have been construed immediately with *αὐτούς* (as in all thirteen occurrences of the sequence *αὐτοὺς ὑμᾶς* in the extant fifth- and fourth-century Greek texts).

ὑμᾶς {V_a}

The participle *εἰδότας* would be attached to *ὑμᾶς*, and eventually the expectation for a finite transitive verb (an optative, a subjunctive, or a historical tense of the indicative) is satisfied by *μηκύνοι*.

εἰδότας {V_a}
μηκύνοι

At this stage the attachment of the accusatives *αὐτοὺς ὑμᾶς εἰδότας* is anything but clear and the rest of the sentence would need to be reanalysed to accommodate them. This implies the reanalysis of *οὐδὲν χεῖρον* as a phrase consisting of an adverb modified by a negative and modifying the participle *εἰδότας*, and not as one consisting of an indefinite pronoun modified by an adjective (the direction of the dependency between *οὐδέν* and *χεῖρον* should be reversed) and governed by the preposition *πρός*—a syntactic position that would need to be assigned to the accusative *ὑμᾶς* and its modifiers. At the same time, the semantics of the prepositional phrase headed by *πρός* would need to be reinterpreted as indicating the addressee of the action expressed by the verb instead of its purpose (as is the case when this preposition governs abstract nouns; see Luraghi 2003: 294–5). All such difficulties would be prevented by the intonational separation of the *οὐδὲν χεῖρον* from the rest of the prepositional phrase; once again, we are dealing with a problem of 'grouping'; we should not exclude the supposition that prosodic boundaries would be able to solve this problem.

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 15.

		Reanalyses (reading)		
Sentence	Constituent	Syntactic	Referential	Semantic
(29) (Th. 2.35.3)	*ὑμῶν*	×		
(30) (Th. 2.36.4)	*τρόπων*	×		
(81) (Th. 2.36.4)	*τὸν πάντα ὅμιλον*	×		
(81) (Th. 2.36.4)	*ξύμφορον*			×
(31) (Th. 2.40.3)	*ἐκλογίζεσθαι*	×		
(84) (Th. 2.42.2)	*πολλοῖς*	×		
(85) (Th. 2.42.4)	*τῶνδε*	×		×
(85) (Th. 2.42.4)	*ἔτι*	×		
(86) (Th. 2.43.1)	*πρός*			×
(86) (Th. 2.43.1)	*οὐδέν*	×		×
(86) (Th. 2.43.1)	*χεῖρον*	×		×
(39) (Th. 2.44.4)	*οὐκ*	×		
	Total:	15	Sample size:	1936 words

5.4.13 Pl. *Mnx.* 236c11–244c3

(87) *ναυσὶ δὲ τῆς τε θαλάττης ἐκράτει καὶ τῶν νήσων ὥστε μηδὲ ἀξιοῦν ἀντίπαλον αὐτῷ μηδένα εἶναι.*

'With his ships he [*sc.* Darius] ruled over both the sea and the islands, so that nobody even dared to be his rival.' (Pl. *Mnx.* 239e4–240a2)

This sentence is potentially ambiguous because the subject of the infinitive *ἀξιοῦν* may be inferred from the context and assumed to be 'Darius' (see Rijksbaron 2002: 64 with examples), in which case the verb may be taken to govern the accusative *μηδένα* and the infinitive *εἶναι* (which would give the meaning 'he did not consider anybody worthy to be his rival'). If the subject is not inferred to be 'Darius', the most obvious candidate-subject would conceivably be the correct one, the pronoun *μηδένα*. Possibly, a prosodic boundary would separate *ἀντίπαλον αὐτῷ* from what follows and ensure that the phrase is not construed as a modifier of a noun but as a constituent (a predicate or complement) depending on a different verb from *ἀξιόω*, which does not take an adjective as a complement. As usual, chance level for each initial interpretation induced by the verb *ἀξιοῦν* is 50 per cent—in the absence of other cues, the verb would raise the expectation for an expressed subject 50 per cent of the time and be interpreted as having a discourse-inferable subject the other 50 per cent of the time. Querying of the Perseus Ancient Greek Dependency Treebanks (version 1.7),[14] which include both Attic and non-Attic texts, shows that in fifty-five out of sixty-seven instances of *ὥστε*-plus-infinitive clauses the subject is not expressed and must be inferred from the discourse context. When the subject is expressed, it occurs eight times before the infinitive and four times after the infinitive. Even though these data seem to suggest that in sentence (87) the verb would probably trigger the inference of a subject from the context, they also indicate that the postponement of an expressed subject is not impossible in such constructions. Only a study of the frequency of word-order-patterns in

[14] Available at https://perseusdl.github.io/treebank_data/. The treebanks include all the works of Homer, Hesiod, and Aeschylus, Sophocles' *Ajax*, *Antigone*, *Electra*, *Oedipus Tyrannus* and *Trachinae*, Plato's *Euthyphro*, and book 12 of Athenaeus' *Deipnosophists*. The results have been double-checked manually.

natural Attic would allow us to assess whether the location of a noun phrase in the accusative in a *ὥστε*-plus-infinitive clause would determine its default interpretation as the subject of the verb and, as noted above, this is something we hopelessly lack. Once again, we need to suspend judgement on the potential ambiguity and necessity of reanalysis in the on-line processing of the sentence under discussion.

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 0.

5.4.14 Isoc. 9.1–43

(88) *ὅταν ὁρᾷ τοὺς μὲν περὶ τὰ Τρωϊκὰ καὶ τοὺς ἐπέκεινα γενομένους ὑμνουμένους καὶ τραγῳδουμένους, αὑτὸν δέ, κτλ.*

'When he should see those who lived at the time of the Trojan war and those who lived even earlier are celebrated in songs and tragedy, but himself, etc.' (Isoc. 9.6)

The contiguity of *ὑμνουμένους καὶ τραγῳδουμένους* to *γενομένους* could induce a hearer to interpret the former two coordinate participles as asyndetically coordinate to *γενομένους* as well (which may act as a syntactic prime), as it were [*γενομένους* + *ὑμνουμένους* + *καὶ τραγῳδουμένους*]. This construction is not rare in Attic prose (cf. Denniston 1954: 290). The entire group would then be interpreted as coordinate to *τοὺς μὲν περὶ τὰ Τρωϊκά*, with the general meaning 'those at the time of the Trojan war and those who lived, who were being celebrated in song, and who were being celebrated in tragedy even earlier'. Rather, *ὑμνουμένους καὶ τραγῳδουμένους* are predicative and depend directly on the finite verb (*ὁρᾷ*). A prosodic boundary would probably separate *γενομένους* from this group and indicate far attachment to the verb; in its absence, the clause is potentially globally ambiguous.

(89) *τῶν μὲν οὖν τὰς πατρικὰς βασιλείας παραλαβόντων τίς οὐκ ἂν τοὺς Εὐαγόρου κινδύνους προκρίνειεν;*

'Who would not prefer the perils of Evagoras over those who inherited the kingships of their fathers?' (Isoc. 9.35)

The earliest interpretation of *παραλαβόντων* would be as a partitive governed by *τίς* ('who among those . . . ') but, once again, a prosodic boundary before *τίς* (signalled by postpositive *ἄν* following a short

group consisting of the initial constituent and a prepositive, cf. note 14) would induce a preference for far attachment.

(90) *φανήσομαι γὰρ οὐκ ἐκ παντὸς τρόπου μεγάλα λέγειν προθυμούμενος, ἀλλὰ διὰ τὴν τοῦ πράγματος ἀλήθειαν οὕτω περὶ αὐτοῦ θρασέως εἰρηκώς.*

'For I will seem to have spoken so boldly about him not with the desire of being magniloquent in whatever way, but because of the reality of the facts.' (Isoc. 9.39)

Here, *προθυμούμενος* modifies *εἰρηκώς* and contrasts with *διὰ τὴν τοῦ πράγματος ἀλήθειαν*. However, *προθυμούμενος* may just as well be interpreted as contrasting with *εἰρηκώς* ('for I will seem not to be desiring [in the future, at the same time as *φανήσομαι*][15] to be magniloquent in whatever way, but to have spoken so boldly about him because of the reality of the facts'). The semantics of these interpretations are slightly different, but perhaps not different enough to induce a reanalysis of the sentence.[16]

Reconstructible reanalyses (listening): 0.
Reconstructible reanalyses (reading): 0.

5.5 DISCUSSION

The number of plausibly reconstructible reanalyses in the corpus is extremely low (only two in the sample from Plato's *Apology of Socrates*, two in Antiphon's *Third Tetralogy*, and one in Isocrates' *Areopagiticus*), which does not allow meaningful quantitative comparisons between samples or groups of samples. On the one hand, this suggests that it is unlikely that ancient native speakers would have found any of the sampled texts particularly hard to process, on the assumption of competent oral delivery. This confirms the hypothesis that scripts were optimized for on-line oral comprehension and also indicates that there is no evidence that scriptures would have been

[15] Cf. Rijksbaron 2002: 117.
[16] Cf. also Mathieu and Brémond's Budé translation: 'Il apparaîtra que je ne cherche pas à atteindre par toutes les manières à la grande éloquence, mais que c'est la réalité de ses exploits qui m'a fait parler en termes si hardis.'

harder to process than scripts, even though, in principle, writers could have been laxer in this respect. On the other hand, the high number of doubtful passages in certain samples reveals the intrinsic limits of a psycholinguistic approach to a dead language.[17] In several cases, it is simply not possible to reconstruct firmly enough the default interpretation of sentences in native on-line processing, and any assumption that we might make cannot be tested experimentally. Furthermore, the limits of the current state of experimental research on sentence processing in free-word-order languages could increase the risk of overstating the difficulty (or potential difficulty) of linguistic sequences. For this reason, throughout this 'experiment' I have adopted a cautious position in the assessment of cases for which the comparative evidence is not relevant or solid enough to draw any defensible conclusion. In addition, dealing with a dead language entails the lack of any faithful representation of the linguistic experience of the proficient speakers of Attic that constituted the audiences for which the texts examined here were composed. In the absence of a representative and balanced corpus including written and spoken varieties of fourth-century Attic, we may only speculate about the frequency of lexemes, expressions, syntactic structures, and word-order patterns and their expectedness for ancient native speakers. The irremediable lack of this information suggests that we should suspend judgement on vocabulary items or word sequences whose potential difficulty may be suspected on the grounds of their rarity in the extant Attic texts, and this potentially reduces the number of difficulties which we may reconstruct in text samples.

As to methodological results, this 'experiment' indicates that an approach aimed at the reconstruction of on-line native processing of sentences in oral comprehension may contribute new material for the study of prosodic and intonational phenomena in Classical Greek. The identification of sequences that would plausibly have needed to be disambiguated in oral delivery by a non-naïve speaker or reader (that is, one who would be aware of such ambiguities in the first place) may be taken into account for the identification of *cola* and

[17] Interestingly, twice as many doubtful cases occur in scriptures (twelve sentences: 3 × Th., 1 × Antipho 4, 1 × Isoc. 7, 5 × Isoc. 6, 1 × Pl. *Mnx.*, 1 × Isoc. 9) than in scripts (six sentences: 2 × D. 22, 1 × Lys. 1, 1 × D. 9, 1 × D. 15, 1 × Hyp. 6); see Table 5.6.

other prosodic constituents in Classical Greek. This approach may be extended to the study of the prosodic reality of metrical phenomena (see for instance the initial exploration of the question of the correspondence between metrical and prosodic boundaries in McGillivray and Vatri 2015).

The fact that a vast majority of potentially ambiguous sequences identified in this 'experiment' may be disambiguated by prosody is a further indication that we should use much caution when discussing the processability of classical Attic texts. What could be difficult on paper (or on papyrus, if one wishes) would not necessarily be difficult when heard. This reinforces the necessity to be aware of the textual practices of ancient audiences (and of ancient rhetoricians who discuss difficulty and ambiguity; cf. 4.2). The number of sequences that, in the absence of prosodic cues, would present local and global ambiguities is summarized in Table 5.6. In the table, the samples are ranked by their 'readability' score, corresponding to the relative frequency of reconstructible reanalyses (reanalyses per thousand words).

These scores suggest that the sample from Thucydides would probably have been the hardest one in the lot for a native speaker accessing the text in solitary reading, followed by Antiphon's *Third Tetralogy*, the sample from Isocrates' *Areopagiticus*, and so on. Before we draw any conclusions based on this ranking, we must test these scores for statistical significance. In other words, we must address the question whether the probability of finding, for instance, nine reconstructible reanalyses in a sample of 2469 words (as in the excerpt from the *Areopagiticus*) is significantly different from that of finding seven in one of 2247 words (that from Demosthenes' *Against Androtion*). Table 5.7 displays the results of pairwise tests of proportions comparing the scores for samples scoring above zero. Each cell in the table shows the probability (*p*-value) that, for each pair of samples, one would get scores at least as different as those calculated here if there were no 'real' difference between the texts in the incidence of structures which would induce reconstructible reanalyses (the 'null hypothesis'). Such probabilities are expressed as percentages,[18] and it will be assumed (following the common practice of quantitative

[18] This is not the common practice in linguistics and sciences in general (*p*-values are normally expressed as decimals). I have adopted this solution for the sake of readability for scholars who may be less acquainted with these methods.

Table 5.6. Ambiguities and reanalyses (reading)

	Sample size (words)	Local ambiguities			Global ambiguities	Inferable Wackernagel boundaries	Uncertain/ unassessable cases
		In sentences	Reanalyses	Reanalyses/1000 words	In sentences		
Th. 2.35–46	1936	(29) (30) (31) (39) (81) (84) (85) (86)	15	7.75	(32) (50) (57) (58) (80) (85)	(85)	(10) (82) (83)
Antipho 4	1928	(34) (70) (71) (72) (74)	11	5.7	(41) (51) (52) (59)	–	(73)
Isoc. 7 (1–47)	2469	(4) (75) (76) (77) (78) (79)	9	3.64	(60)	(45)	(12)
D. 22 (1–33)	2447	(3) (23) (24)	7	2.86	(37) (49) (54) (64)	–	(63) (65)
Pl. *Ap.* (17a–24a4)	2409	(66) (67) (69)	5	2.07	(40) (68)	–	–
Lys. 12 (1–50)	2438	(26) (27) (42) (46)	4	1.64	(2) (61)	–	(11)
Isoc. 6 (1–45)	2468	(5) (28)	2	0.81	–	–	(8) (9) (13) (14) (15)
Lys. 1	2426	–			–	–	(18)
Antipho 1	1732	–			(33)	(47)	–
D. 9 (1–40)	2436	–			(55) (56)	–	(7)
D. 15	2238	–			(22) (53)	–	(17)
Hyp. 6	2054	–			(38)	–	(16)
Pl. *Mnx.* (236c11–244c3)	2406	–			(25) (43)	–	(87)
Isoc. 9 (1–43)	2392	–			(6) (35) (36) (88) (90)	(44), (48), (89)	(6)

Table 5.7. Significance of differences in readability scores between samples

	Lys. 12 (1–50)	D. 22 (1–33)	Pl. *Ap.* (17a–24a4)	Antipho 4	Isoc. 6 (1–45)	Isoc. 7 (1–47)	Th. 2.35–46
Lys. 12 (1–50)	–	55%	98%	4%	67%	27%	0.5%
D. 22 (1–33)		–	79%	22%	18%	81%	4%
Pl. *Ap.* (17a–24a4)			–	9%	43%	45%	1%
Antipho 4				–	0.7%	43%	56%
Isoc. 6 (1–45)					–	7%	0.06%
Isoc. 7 (1–47)						–	10%
Th. 2.35–46							–

research in the humanities and social sciences)[19] that only those scoring less than 5 per cent provide strong evidence that the readability scores of two samples are different enough.[20]

The results indicate that the sample from Thucydides may be regarded as significantly harder to read than all other samples except that from Isocrates' *Areopagiticus* and Antiphon's *Third Tetralogy*. The latter is also significantly harder than the sample from Isocrates' *Archidamus* and Lysias' *Against Eratosthenes*. None of the other differences are statistically significant.

The 'discovery' that the prose of Thucydides was hard to read even for native speakers of Classical Greek is certainly not unexpected. Dionysius of Halicarnassus provides us with first-hand information confirming that this was commonly the case in his day. In his treatise on Thucydides (*Th.* 51), he reports that very few among of his contemporaries were able to understand the whole of the text of Thucydides, and even such proficient readers would need a linguistic commentary (ἐξήγησις γραμματικῆς) to understand certain passages (see de Jonge 2008: 111)—this certainly represents an encouraging confirmation that we are on the right track with the approach developed in this chapter.

[19] Cf. McGillivray 2014: 179–80.

[20] These statistics were calculated using the function *prop.test* in the statistical software R. All tests performed here are two-sided, i.e. they aim to verify that the proportions in texts are simply different from one another, and not that the proportion in one sample is larger or smaller than that in the other. In the test, the count of successes corresponds to the number of reconstructible reanalyses, while the count of trials corresponds to three times the number of words in the sample (since the maximum reanalysis score for each word is three—syntactic, referential, and semantic—by experimental design).

Almost paradoxically, it would appear that reading Thucydides' oratory could be more difficult than hearing it, at least if the text was read aloud by a competent and well-prepared reader. This is a scenario which we may well envisage for the age of Thucydides and should not be excluded for that of Dionysius (cf. Hutchinson 2008: 38), even if his mention of the necessity of a 'companion' to the text points to solitary, rather than leisurely collective reading. As far as *asapheia* is concerned, the 'undeliverability' that is often ascribed to Thucydides' speeches would be connected to their lack of 'content-clarity' (understandability) and ultimately result 'from the complexity and compression of their argumentation' (Cole 1991: 105–6) more than specifically linguistic features of his prose. This type of *asapheia* would not necessarily correspond to sentence-processing difficulty, but to the further effort required of the receivers to achieve intellectual *sapheneia*, regardless of the mode of reception. Intellectual *sapheneia* could be achieved through off-line interpretation—and perhaps only through off-line interpretation—but this does not mean that 'content-obscurity' was to be avoided at all costs in texts that were conceived as scripts and meant to be primarily received on-line. As we have seen (4.1), ancient rhetoricians acknowledged the merits of intentional 'content-obscurity', and the late antique and Byzantine tradition came to regard it as a rhetorical quality in its own right.

6

Conclusion and Future Directions

In the scholarship on Attic prose, orality is frequently used as an umbrella term to refer to a number of different ideas (1.1). A text may be called oral because it was habitually received through the spoken channel ('literal' orality), or because it shows traces of an oral 'mentality', or because it displays features suggesting oral composition or connected to a variously identified 'oral style', whose relationship with 'literal' orality is anything but straightforward (1.2). In this study, I have adopted a 'literalist' perspective in order to explore how the contexts of the oral performance of prose texts in classical Athens relate to their linguistic form.

The idea that such a connection may exist draws on early Greek rhetorical thought, which distinguishes between a 'written' and a 'non-written' style. This distinction comes to transcend the question of oral or written composition and eventually appears to relate to the function of the written texts in different contexts of reception. As we have seen (1.3), prose texts could be composed for *hypokrisis* (fully-fledged oratorical delivery), in which case the written text would play no role in their immediate reception (and, furthermore, their 'writtenness' ought to be concealed), or for *anagnosis* (reading), an activity which would often use the spoken channel, but to which the 'writtenness' of the text was evidently central. *Hypokrisis* allowed speakers to use paralinguistic elements (voice and gesture) in their performance, which means that writers composing texts for this mode of performance did not need to codify all information in the text itself (as linguistic co-text). On the other hand, the oral recitation of a text in a situational context with no written copies available would encourage writers to optimize its form for effective transmission of the message and the speaker's communicative intentions, on a single hearing.

In *hypokrisis*, communication was entirely on-line, but the opposite is not true of all contexts in which *anagnosis* took place. As we

have seen in Chapter 2, off-line perusal of texts was possible in solitary and in-house group reading, whereas public oratorical performances and semi-formal small-scale *epideixeis* were governed by socio-cultural norms that did not allow hearers to stop or manipulate the flow of the text (if, for instance, they needed to re-listen to a passage). In the fourth century, epideictic performances could consist of formal public or semi-public readings, as testified especially by Isocrates (see 3.4.3); such events may be classified as cases of *anagnosis* that were governed by 'public' communication norms and, as a consequence, permitted only an on-line reception of the text.

In Chapter 3, I have discussed the distinction between texts that were conceived to be received on-line and whose writtenness was instrumental only to composition and transmission (scripts), and texts that were conceived to be perused as written texts in situational contexts that allowed off-line access to their form and contents (scriptures). A review of the Athenian 'book culture' and of the early circulation of written prose texts enabled us to classify the extant Attic prose texts on the basis of their original conception (as scripts or scriptures). One of the features that is often ascribed to scripts is the necessity that they should be clear.

Now, clarity (*sapheneia*) is a complex and multi-faceted concept (4.1). To begin with, clarity may be conceived of as the mental state of having clear knowledge, which results from the effective communication of meaning and intentions. On the other hand, clarity may also be conceived of as a rhetorical quality of a text ('clarity of expression'), and features prominently as such throughout the ancient rhetorical tradition. Clarity in this sense may concern the form and meaning of the text, as well as the relationship between the two. A text may be clear because its linguistic form is easy to process, or because its contents are easy to grasp intellectually (either because they are intrinsically simple, or because they are presented effectively in discourse), or because the communicative intentions of the author are clear (which is not guaranteed even when form and contents are perfectly clear).

The distinction between clarity of form ('processability') and clarity of contents ('understandability') is an ancient one. Understandability may be manipulated by an author; as we have seen (4.1), temporary failure at it invites an interpretive effort on the part of the receiver and may still result in intellectual clarity in both on-line and off-line comprehension. Conversely, processability is a *desideratum* of all communication—almost a feature of grammaticality—and all the

more so for texts that can only be received and comprehended on-line. In this respect, it may be hypothesized that scriptures can afford to be less than optimal from the point of view of processability if other rhetorical concerns override the need for such an optimization.

Assessing the processability of linguistic structures in a dead language is not a simple task. In Chapter 4, I used the precepts and examples contained in the ancient Greek rhetorical literature as evidence for the perception of linguistic clarity and obscurity on the part of native speakers of Classical Greek. I then sought to examine this evidence in the light of modern research on language comprehension. This is perhaps the most prominent methodological contribution of this study, and a significant improvement on critical practices based on impressionistic judgements of 'difficulty' or on the application of arbitrary criteria. If I may repeat the medical metaphor I used above (4.3), when ancient mother-tongue rhetoricians give examples of expressions in their own language that they perceive as a difficult, they provide us with some cognitive symptomatology of the linguistic form used as an illustration. In turn, the theoretical and experimental findings of modern psycholinguistics provide a framework through which we may seek to reach a scientific diagnosis based on such symptoms. Ideally, the interpretation of the ancient discussions of 'form-clarity' in the light of such a framework should allow us to extrapolate general principles that one might apply to the analysis of other ancient texts, provided that we have a clear understanding of the ancient rhetorical theories and, quite importantly, of the textual practices that lie behind the linguistic observations presented by the sources. On this point, Chapters 4 and 5 show that ancient theoreticians occasionally fail to take sufficient account of the role of prosody in language processing, in spite of its crucial importance.

On these grounds, I have analysed a small corpus of samples of Attic speeches (both real and fictional) in the attempt to identify linguistic structures that could have disrupted the processability of sentences in texts conceived as scripts and scriptures, and to verify the hypothesis that scripts cannot afford to be hard for listeners to process (Chapter 5). The number of structures that could be identified confidently enough is extremely low, which seems to confirm the hypothesis and, at the same time, may be taken as an indication that scriptures were not necessarily hard to process either. Through this exercise, I have explored the limits and highlighted the difficulties encountered in applying a psycholinguistic approach to the analysis

of classical texts (see 5.5). For one thing, scientific advances in the understanding of sentence processing (especially in free-word-order languages) provide a good general picture of how the comprehension of Classical Greek would have worked, but they are not always sufficient for us to reconstruct default interpretations and assess a number of points of detail in the native on-line parsing of certain linguistic sequences. For another, we are not in a position to fully assess the linguistic experience of members of the original audiences of the texts—we lack representative linguistic data including records of actual ordinary spoken language. These methodological limitations call for a cautious suspension of judgement in several cases.

Alongside this exercise, I have studied the on-line processability of the same samples of Attic prose in a different mode of reception, that of solitary first-sight reading, which may be assumed as a common comprehension condition for a significant array of ancient audiences (including individuals who used scripts in preparation for oral performance). Such a mode of reception may also be assumed for later critics and rhetoricians, and approximates that of modern (non-native) readers of the classical texts. The 'readability' of the samples was assessed in the same way as their (oral/aural) processability, but the effect of paralinguistic information that could not be inferred at first sight from the written text alone was disregarded. In spite of the limitations described above, this study suggests that the sample from Thucydides was significantly harder to read than all other sampled texts but Antiphon's *Third Tetralogy* and Isocrates' *Areopagiticus*. Antiphon's *Third Tetralogy* also appears to be significantly harder to read than the samples from Isocrates' *Archidamus* and Lysias' *Against Eratosthenes*. This study confirms the impressions of ancient critics (such as Dionysius of Halicarnassus, see 5.5)[1] and is a clear indication that we need to be aware of the exact textual practices that we envisage for ancient audiences when we discuss questions in the ancient reception of the classical texts: what could be difficult on papyrus would not necessarily be difficult when heard.

[1] Interestingly, Dionysius clearly distinguishes the style of Thucydides from that of Antiphon (of Rhamnus) as far as its difficulty is concerned (*Th.* 51), but brings the two together (*Comp.* 10.4) as regards their lack of aesthetic attractiveness (*τὸ ἡδύ*, see Van Wyk Cronjé 1986: 141). Dionysius' judgement would certainly not be based on the *Tetralogies* alone—these were included in the Alexandrian collection of Antiphon's works and transmitted together with his actual logographic speeches (see Gagarin 2002: 52).

At the same time, the 'experiment' as a whole shows how a psycholinguistic approach to the native comprehension of classical Greek may contribute to the reconstruction of significant aspects of the oral performance of Attic prose in its original contexts. If one accepts that non-naïve speakers or readers would have used prosody and gesture to resolve ambiguities of which they were aware, the identification of ambiguities that could have been resolved by these paralinguistic means would correspond to the identification of cues for appropriate oral and 'somatic'[2] delivery. This may well be regarded as a new element to take into account in the reconstruction of prosodic phenomena in Greek texts at large (see 5.5). In addition, thinking about syntactic structures in terms of processability may open up new perspectives for our understanding of questions in Greek grammar (e.g. preferences in word order and sentence structure).

If the hypothesis that Attic scripts were flawlessly processable in listening comprehension can be verified at least to a satisfactory extent, the hypothesis that scripts and scriptures may differ as regards their understandability is difficult to formulate sensibly in the first place. A number of ancient rhetoricians make the point that obscurity may add to the 'grandeur' or 'forcefulness' of style (cf. 4.1)—and these are stylistic qualities that are by no means confined to scriptures. At the same time, both Alcidamas and Aristotle ascribe precision (*akribeia*) to the 'written style' (see 1.3). This indicates that at least certain types of scripture would not admit obscurity because of their desituated nature; as Plato and Isocrates remark (see 1.3), written texts may not explain themselves and do not faithfully encode all the features of spoken language that contribute to their aesthetic appreciation and, we may add, facilitate their comprehension. The acceptability of content-obscurity in scripts and scriptures ultimately depends on the nature and purpose of each text and is also a matter of degree and sustainability through the text. On the grounds of these observations, one could hypothesize that scriptures that could admit conceptual obscurity could also allow for 'deeper' and/or more sustained obscurity than scripts which could admit a certain degree of content-obscurity. This is an elaborate hypothesis that carries its own complex methodological questions, and we shall leave it for another study.

[2] See Scollon and Scollon 1995 on somatic communication.

APPENDIX

Notes on Linguistic Dependencies in Classical Greek

A.1 Types of dependency

In linguistics, saying that a word w_1 depends on a word w_2 means that the inflectional form, the semantic role, or the syntactic function of w_1 (*satellite*) are conditioned by w_2 (*governor*). Dependencies are always asymmetric: if w_1 depends on w_2, w_2 cannot depend on w_1. Each word admits one and only one governor and each sentence admits one and only one completely independent element (node). All the words in the sentence are connected to at least another (which constitutes a *minimal phrase*) and none is left out of the dependency structure. Anaphoric relations—by which, for instance, a pronoun points to an entity previously evoked by a noun (coreferentiality)—are not to be considered a type of dependency.

Three types of dependency can be distinguished: *morphological* dependency, *semantic* dependency, and *syntactic* dependency (Mel'čuk 2009, Mel'čuk and Polguère 2009). Let us consider a Greek example:

ἐν τῇ νῦν Ἑλλάδι καλεομένῃ χώρῃ

'In the land now called Hellas' (Hdt. 1.1)

From a semantic point of view, *καλεομένῃ* is a predicate and takes *Ἑλλάδι* and *χώρῃ* as arguments (the complement and the subject respectively). Therefore, *Ἑλλάδι* and *χώρῃ* can be said to depend on *καλεομένῃ semantically*. On the other hand, the fact that both *καλεομένῃ* and *Ἑλλάδι* are in the dative is determined by agreement with *χώρῃ*, which can be said to govern them *morphologically*. Morphological dependency does not imply syntactic dependency, as the following example clearly shows:

διακελεύσομαι τοῖσι ἰοῦσι εἶναι ὡς προθυμοτάτοισι.

'I will exhort those who go to be as ready as possible.' (Hdt. 1.36)

Here, the object is in the dative because of the requirements of the *government pattern* of *διακελεύσομαι*. *Τοῖσι ἰοῦσι*, however, is also the semantic (or *notional*) subject of the copula, whose predicate *προθυμοτάτοισι* is expressed in the dative in order to agree with *ἰοῦσι*. The semantic subject governs the predicate morphologically but not syntactically.

If we turn to *syntactic* dependency, different criteria come into play (Mel'čuk 2009: 27–33). A word w_1 governs a word w_2 syntactically if the syntactic function of the phrase consisting of w_1 and w_2 is the same as that of w_1 alone: w_1 defines the *syntactic valence* of the entire phrase and can be called the *head of the phrase* (cf. Kurzová 1988: 148). The syntactic function of an English phrase like '*very good*', for instance, is equivalent to that of '*good*' alone: the phrase can be linked to other elements in the sentence in the same way as '*good*' alone would. Therefore, '*good*' is the head of the phrase and governs '*very*'. Likewise, the syntactic links of a prepositional phrase like '*in Oxford*' are determined by the preposition, which therefore governs the noun. The syntactic function of the entire prepositional phrase in *ἐν τῇ νῦν Ἑλλάδι καλεομένῃ χώρῃ* corresponds to that of the preposition *ἐν*, which must be considered the head of the phrase. Moving down a level, the next element in the hierarchy is the noun *χώρῃ*, which is necessary for the article *τῇ* and the participle *καλεομένῃ* to appear in the sentence (alternative theories regard determiners such as the article as heads; see Mel'čuk 2009: 77–8 and Wood 2007: 167, with further references). Therefore *χώρῃ* is a direct satellite of *ἐν* and the governor of both the article and the participle. The latter, in turn, governs the adverb *νῦν* and the complement *Ἑλλάδι* and depends directly on *χώρῃ*. Sometimes, however, it is not possible to determine immediately which element defines the syntactic valence of a phrase (cf. Haug 2010: 25). Let us consider the following example:

> *πόλιν προτείνων Ἄργος οὐ σμικρὸν φίλην ἐχθράν τε θέσθαι.*
> 'Alleging that it is not a little thing to make the city of Argos a friend or an enemy.' (E. *Heracl.* 21–2)

Here, *πόλιν* and *Ἄργος* belong to the same noun phrase, one noun being in apposition to the other. The syntactic valence of the phrase does not depend on either one of the two more than the other: the phrase depends only on *θέσθαι* and does not govern any other element. The infinitive can directly govern both *πόλιν* and *Ἄργος*, and it is impossible to determine which noun is the head and which is the apposition on these grounds. The complements, however, are expressed by feminine adjectives (*φίλην ἐχθράν τε*): their inflectional form is controlled by *πόλιν*, not by *Ἄργος*, a neuter noun. Therefore, it is *πόλιν* that must be considered the head of the noun phrase, with *Ἄργος* being its apposition. Other instances of appositional proper names are more difficult, especially when phrases lack morphological relations to words external to the phrase itself. Such is the case with the following example:

> *καταπλώσαντας ἐπὶ Φᾶσιν ποταμόν*
> 'Sailing to the Phasis river' (Hdt. 1.2)

Here, the participle governs *ἐπί* (the head of the prepositional phrase), but it is not clear whether *ἐπί* directly governs *Φᾶσιν* or *ποταμόν*. Both nouns can depend on the preposition (both *ἐπὶ Φᾶσιν* and *ἐπὶ ποταμόν* are grammatical phrases), and neither determines the syntactic valence of the other. In such cases the semantics of the phrase come into play. The only function of the proper name is to point to a specific instance of the category 'rivers': of all rivers, the Phasis is the one that is being singled out (as opposed to saying that of all the things called Phasis, the river is the one that is being singled out; the three criteria presented here are introduced by Mel'čuk 2009: 27–33). Therefore, one can argue that *ποταμόν* is semantically more central and must be considered the head of the phrase (cf. Haug 2010: 25).

Patterns consisting of participles which appear between the article and a proper name (that is, in attributive position) are not straightforward to analyse:

τοὺς νόμους ὁ <u>τιθεὶς</u> τούτους <u>Σόλων</u>

'The giver of these laws, Solon' (D. 22.25)

The question is whether the participle is to be interpreted as an attribute of the proper name ('these-laws-giving Solon') or as substantivized and in an appositional relation to the proper name ('the giver of these laws, Solon', or 'Solon, the giver of these laws', cf. *τὸν θέντα τὸν νόμον ἐξετάσαι Σόλωνα*, D. 22.30). With plural proper names the former interpretation is often the more plausible, with the participle corresponding to a restrictive relative clause:

οἱ τὰς νήσους <u>ἔχοντες</u> <u>Ἴωνες</u>

'The Ionians who hold the islands' (Hdt. 1.169), as opposed to the mainland Ionians. Cf. *τῶν ἐν τῇ ἠπείρῳ οἰκημένων Ἑλλήνων* (Hdt. 1.27), *τοῖσι τὰς νήσους οἰκημένοισι Ἴωσι* (Hdt. 1.27), *τῶν παραμεινάντων Ἀθηναίων* (Hdt. 1.64), *τῶν ἀγαθοεργῶν καλεομένων Σπαρτιητέων* (Hdt. 1.67), *οἱ νῦν ὄντες ἐν αὐτῇ Ῥόδιοι.* (D. 15.14)

However, in the following sentence the latter interpretation seems preferable:

τοὺς πρώτους ἀντιταξαμένους τῇ τῶν Ἑλλήνων ἐλευθερίᾳ Βοιωτοὺς καὶ Μακεδόνας καὶ Εὐβοέας.

'The first opponents of Greek freedom, the Boeotians, the Macedonians, and the Euboeans.' (Hyp. 6.11)

If we adopted an appositional interpretation for *τοὺς νόμους ὁ τιθεὶς τούτους Σόλων*, we might wonder whether *Σόλων* is an apposition to *ὁ τιθείς* or the other way around. In English this seems to depend on the position of the common and proper nouns in the linear order of the sentence. Proper names which follow common nouns are often interpreted in the linguistic literature as 'close appositions', that is, as appositions which restrict the meaning of the

common noun (as in '*my brother John*'). Conversely, common nouns which follow proper names are interpreted as 'loose appositions', which correspond to non-restrictive relative clauses (as in '*John, my brother*' meaning '*John, who is my brother*'; see Heringa 2012 and Burton-Roberts 1975). At first glance, the situation of such phrases in Classical Greek appears similar. The common nouns in phrases like *Σόλων ἀνὴρ Ἀθηναῖος*, *Κροῖσος ὁ βασιλεύς*, *Σκυθέων τῶν νομάδων ἀνδρῶν*, *Κυαξάρης ὁ παῖς*, or *Μιτραδάτην τόν βουκόλον* (all from the first book of Herodotus), and *Λεωσθένους τοῦ στρατηγοῦ* (Hyp. 6.1), for instance, could all be interpreted as 'loose appositions'. Conversely, the proper names in phrases like *τὴν θυγατέρα Εὐρώπην*, *ὁ βασιλεὺς Κροῖσος*, *τὸν παῖδα Δαρεῖον*, *τὴν θεὸν Μύλιττα* (all from Hdt. 1), *οὑμὸς πατὴρ Κέφαλος* (Lys. 12.4), *ὁ μὲν πρυτανεύσας ταῦτα καὶ πείσας Μαύσωλος* (D. 15.3), *Χερρονήσου τὴν μεγίστην ἔχει πόλιν Καρδίαν* (D. 9.35), *τὸν στρατηγὸν Λεωσθένη* (Hyp. 6.3), and *τὸν δὴ τοιαύτας καρτερίας ἀόκνως ὑπομεῖναι τοὺς πολίτας προτρεψάμενον Λεωσθένη* (Hyp. 6.23) can be interpreted as 'close appositions'. In all such cases, the common noun (or the substantivized participle) already points to the right referent, which is explicitly identified by the proper name. However, if an ethnonym in the plural follows a common noun, it is not always easy to tell if that ethnonym is a noun (and an apposition) or an adjective (and an attribute):

τοὺς δεσπότας Μήδους ἐδουλώσατο.

'He enslaved the masters, the Medes.' (Pl. *Mnx.* 239e1; this sentence means that the Medes as a people were masters and were subsequently enslaved, which should indicate that *Μήδους* is an apposition)

λαβόντες αὐτῶν τοὺς ἡγεμόνας Λακεδαιμονίους ἐν τῇ Σφαγίᾳ (Pl. *Mnx.* 242c6–7)

'Having captured their leaders, the Lacedaemonians, in Sphagia' (apposition), or 'their Spartan leaders' (attribute), which seems more plausible since we are not dealing with the Spartan people.

Moreover, regular patterns with names of rivers, cities, and islands accompanied by *ποταμός*, *πόλις*, and *νῆσος* respectively are even harder to discern (Cooper 1998: 419–24)—we shall not discuss this problem further here.

Difficulties also arise when the elements in a phrase belong to the same word class. This is the case with substantivized adjectives or pronouns modified by an adjective. In the first book of the *Histories* of Herodotus, for instance, combinations of *ἕτερος* and *τοιοῦτος* or *τοιόσδε* occur three times:

καὶ σοὶ <u>ἕτερα τοιαῦτα</u> παρακελευόμεθα.

'And we recommend to you other such things = to do so as well.' (Hdt. 1.120)

ἐποίεε καὶ ὁ Κῦρος <u>ἕτερα τοιαῦτα</u>.

'Also Cyrus did other such things = dealt with it, too.' (Hdt. 1.191)

ἄνθρωπος καὶ σὺ εἶς καὶ ἑτέρων τοιῶνδε ἄρχεις.

'You are a man, too, and you rule over others of this kind.' (Hdt. 1.207)

In these examples, it is not immediately clear whether *τοιοῦτος* or *τοιόσδε* are adjectives qualifying a substantivized adjective (with the phrase meaning 'such [other men/things]') or *ἕτερος* is an adjective qualifying a pronoun ('other [such men/things]'). If we take the context into account, in *καὶ σοὶ ἕτερα τοιαῦτα παρακελευόμεθα* the idea of 'likeness' seems to prevail. The whole passage reads:

καὶ νῦν εἰ φοβερόν τι ἐνωρῶμεν, πᾶν ἂν σοὶ προεφράζομεν. Νῦν δὲ ἀποσκήψαντος τοῦ ἐνυπνίου ἐς φαῦλον, αὐτοί τε θαρσέομεν καὶ σοὶ ἕτερα τοιαῦτα παρακελευόμεθα.

'And now, if we saw any danger we would announce everything to you beforehand. But now, since the dream has been shown by examination to have a petty meaning, we ourselves are confident, and we recommend you to be so as well.' (Hdt. 1.120)

If *ἕτερα* were omitted, the same meaning would still be conveyed, which would not have been the case if *τοιαῦτα* had been missing. Therefore, *τοιαῦτα* points to a referent ('such things') that is modified by *ἕτερα*, and it can be regarded as the head of the phrase. The same applies to *ἐποίεε καὶ ὁ Κῦρος ἕτερα τοιαῦτα*, where the idea of likeness with the deeds of the Babylonian queen is stressed: *ἀπικόμενος δὲ ἐπὶ τὴν λίμνην, τά περ ἡ τῶν Βαβυλωνίων βασίλεια ἐποίησε κατά τε τὸν ποταμὸν καὶ κατὰ τὴν λίμνην, ἐποίεε καὶ ὁ Κῦρος ἕτερα τοιαῦτα*. Conversely, it is quite evident, even without taking the context into account, that in *ἄνθρωπος καὶ σὺ εἶς καὶ ἑτέρων τοιῶνδε ἄρχεις* the prevailing idea is that of 'otherness'; that is, the referent 'others' is modified by *τοιῶνδε*. Similar problems arise with indefinite phrases like *οὐδὲν ἄλλο*. This phrase can be understood as consisting of a pronoun modified by an adjective (corresponding to English '*nothing else*', with *ἄλλο* in a predicative function) or as an adjective modifying a substantivized adjective ('*no other thing*', with *οὐδέν* as an attribute; on the difficulty of deciding between attributive and predicative use in Greek in the absence of the article see Bergson 1960: 63–4). When these two adjectives modify a noun, *ἄλλος* normally seems to be semantically more central, as the following phrase shows:

οὐδὲν ἄλλο πόλισμα

'No other city' (Hdt. 1.143 and 178)

Here, *ἄλλο* is a descriptive adjective which directly modifies *πόλισμα* and defines the category 'other cities', whereas *οὐδέν* modifies the entire phrase in a restrictive way (that is, selecting an item—a 'null' item in this case—out of a category; see Devine and Stephens 2000: 27 for the distinction between restrictive and descriptive adjectives). The phrase *οὐδὲν* [*ἄλλο πόλισμα*]

means 'no element of the category other cities'. Should the opposite analysis be adopted (*ἄλλο* [*οὐδὲν πόλισμα*]), the phrase would mean 'another element of the category no cities', which is semantically problematic (cf. Mel'čuk 2009: 94–5). On these grounds, one could claim that *ἄλλο* is a substantivized adjective governing *οὐδέν*. However, in some languages where the difference between indefinite pronouns and adjectives is morphologically marked, equivalent phrases consist of an indefinite pronoun ('nothing') modified by an adjective ('else'). Such is the case with Latin (*nihil aliud)* and German (*nichts anderes*), for instance. The indefinite is used as an adjective only when it modifies a noun, as in *οὐδὲν ἄλλο πόλισμα* (cf. Lat. *nullum aliud tempus*, Ger. *kein anderes Buch*) and the adjective can never be substantivized (as it were, Ger. ***kein Anderes*). It might be questionable whether tackling this question in a typological perspective is a valid approach; if it is, a much more comprehensive study would be necessary. Both of these issues are beyond the scope and purposes of this note.

A.2 The top node

Every sentence both admits and requires one and only one independent node, which can be called the *head of the sentence* or the *top node* of the dependency structure and is normally occupied by the main verb. This also applies to subordinate clauses: since the verb of a subordinate clause governs all of its arguments and adjuncts (Mel'čuk 2009: 45), it naturally occupies the top node of the clause. Conjunctions, if present, determine the syntactic valence of the entire clause and, as a consequence, they govern the verb of the subordinate clause. Conversely, the head of an accusative and infinitive clause is always the infinitive and that of a genitive absolute is the participle, which depends directly on the superordinate verb. For the purpose of evaluating the projectivity of a sentence (see 4.3.5), the top node of independent clauses is artificially made to depend on a dummy 'root node', as indicated by the vertical line in Figure A.1.

The dependency between '*for*' and '*what*' crosses the 'root' dependency, which indicates that this sentence is non-projective.

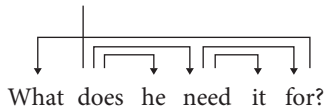

Figure A.1. Dependency graph of '*What does he need it for?*'

A.3 Relative clauses

The top node of a relative clause is its verb (which can be implied). Verbs of relative clauses are described as directly dependent on the antecedent and to govern the relative pronoun (or the noun which it modifies if it is used as an adjective): the semantic/syntactic function of the pronoun depend on the verb, and only its gender and number depend on the antecedent (cf. Mel'čuk 1988: 25–6).

A.4 Accusative and infinitive

Certain verbs govern both an accusative and an infinitive as two distinct arguments. The accusative is often the notional subject of the infinitive (cf. Jiménez López 2006: 170–1), but such constructions should not be mistaken for real object clauses. This is clearly shown by the behaviour of *πείθω*, as Rijksbaron (2002: 99–102) has pointed out (cf. Jiménez López 2006):

πείθουσι ἑωυτοὺς βασιλεύεσθαι.
'They convince themselves to be ruled by a king.' (Hdt. 1.97)

The reflexive pronoun is not necessary for the semantics of *βασιλεύεσθαι* but is an argument of *πείθουσι*. In the following sentence, on the other hand, *πείθω* governs both an accusative of the person and an accusative and infinitive:

πείθει τὸν ἄνδρα ταῦτα ἔχειν οὕτω.
'He convinces the man that these things are so.' (Hdt. 4.154)

The same reasoning applies to *κελεύω* (which also appears with no overt arguments, as in *κελεύσαντες ἐπὶ τὰ ὅπλα*, X. *HG* 2.3.20). This shows more clearly with its compound *διακελεύομαι*, as in *διακελεύσομαι τοῖσι ἰοῦσι εἶναι ὡς προθυμοτάτοισι* ('I will exhort those who go to be as ready as possible', Hdt. 1.36), where the addressee of the command is expressed with the dative (*τοῖσι ἰοῦσι*). In general, verbs which require a *dynamic* (as opposed to *declarative*) infinitive as an obligatory constituent govern the accusative of the person independently from the infinitive itself (dynamic infinitives are those which express a potential state of affairs, whereas declarative infinitives state an actual state of affairs; see Rijksbaron 2002: 97–8). These include *κωλύω*, *ἐάω* (and other verbs of preventing or permitting, such as *ἴσχω*, *ἐρύκω*, *εἴργω*, *ἀπαγορεύω*, and the like), *αἰτιάομαι*, *διδάσκω*, *ἀναγκάζω*, *ἀξιόω*, and *δέομαι*, which governs the genitive of the person. From Hellenistic *koine* onwards, the infinitives in such constructions (especially those with verbs of commanding) started to be replaced by final clauses introduced by *ἵνα* (for instance, *δεόμενος τοῦ Ὑπατίου, ἵνα εὔχηται ὑπὲρ αὐτοῦ*, Callinicus

[fifth cent. AD], *Vita sancti Hypatii* 44.22; see Horrocks 2010: 157 and Hult 1990: 167, 172, 199, 203, 226).

A.5 *οἷός τε*

This phrase, which accompanies an infinitive, is used to express ability ('in such a state as to'). The connective particle *τε* lacks a real coordinating function. The function of this particle in the epic language has been described as 'attenuating, anaphoric-digressive, indefinite, reinforcing, or digressive-permanent' (Lillo 1993: 210). In relative clauses, epic *τε* 'most often seems to mark the permanence of the state of affairs described, but it is not a compulsory marker of this value, and so not all relative clauses describing permanent states of affairs include epic *τε*', and some of them 'describe states of affairs that occur repeatedly' (Probert 2015: 109; see also 420–5). The expressions containing non-coordinating *τε* are in many cases fixed (compare *ὅσον τε*, 'about' with numerals), and their lexicalization is sometimes reflected by orthography (*ὥστε*, *ἅτε*). *Οἷός τε* falls into this category (Ruijgh 1971: 4–5). According to Monteil (1963: 195), in a sentence like *οὐ γάρ τοί σέ γε τοῖον ἐγείνατο πότνια μήτηρ οἷόν τε ῥυτῆρα βιοῦ τ' ἔμεναι καὶ ὀϊστῶν* (*Od.* 21.172–3), the expression introduced by *οἷός τε* can be interpreted as 'belonging to the same category as (*οἷόν τε*) being drawer of bow and arrows'. This is an instance of a zero-copula clause (see Probert 2015: 152–4 on *οἷος*-clauses), with the infinitive as the subject and the adjective as the predicate. According to Ruijgh (1971: 541), the clause can also be considered elliptical, with the infinitive expressing purpose: 'belonging to the same category as [that which others are born belonging to] in order to be drawers of bow and arrows'. Such verbless constructions are analogous to those which gave origin to infinitival clauses introduced by *ὥστε* (where the particle *τε* has the same function; cf. Ruijgh 1971: 539–41, 606–9 and see Monteil 1963: 223–4 with the definition of the infinitive as 'une espèce d'adverbe'). Whatever interpretation is correct, the adjective would always be the predicate regardless of the type of verbless clause and of the function of the infinitive. Consequently, *οἷος* can be regarded as the head of the clause and depends on an antecedent, *τοῖον*, which, like most correlatives, need not be expressed (Burguière 1960: 82). Semantics and the generalized lack of an antecedent make it easy to consider the construction of *οἷός τε* with the infinitive as corresponding to that of adjectives such as *ἀγαθός*, *ἱκανός*, *δυνατός*, and the like (Monteil 1963: 195, K-G 2/i: 9). Such constructions might actually have promoted the construction of *οἷός τε* with the infinitive (Ruijgh 1971: 541) but are not syntactically equivalent to it: when governed by these adjectives, the infinitive can be regarded as expressing purpose (so, for example, Smyth 1920: §§2001–2) or, more plausibly, to behave as an accusative of respect (cf. e.g. *ταῦτα ἀγαθὸς ἕκαστος ἡμῶν ἄπερ σοφός*, *ἃ δὲ ἀμαθής*, *ταῦτα δὲ κακός*,

Pl. *La.* 194d). On the other hand, the construction of *οἷος* (without *τε*) and the infinitive expressing natural disposition (instead of ability, cf. Ruijgh 1971: 48–9, 524–46, in particular 543, and Rijksbaron 2002: 66) is attested only from the fourth century and calls for a different explanation starting from reduced relative clauses (Ruijgh 1971: 543–4). *Οἷος* without *τε* and the infinitive also occurs in fifth-century texts and still conveys the idea of ability. In all such cases, however, it is introduced by a correlative and probably originated from finite verb clauses, with the infinitive being due to analogy with the construction of *οἷός τε* (Monteil 1963: 197).

Bibliography

Adamik, Tomás. 1984. 'Aristotle's theory of the period'. *Philologus* 128: 184–201.

Ademollo, Francesco. 2011. *The* Cratylus *of Plato: a commentary*. Cambridge/New York: Cambridge University Press.

Agbayani, Brian and Chris Golston. 2010. 'Second-position is first-position: Wackernagel's Law and the role of clausal conjunction'. *IF* 115: 1–21.

Agbayani, Brian, Chris Golston, and Dasha Henderer. 2011. 'Prosodic movement'. In *Proceedings of the 28th West Coast Conference on Formal Linguistics*, edited by Mary Byram Washburn, Katherine McKinney-Bock, Erika Varis, Ann Sawyer, and Barbara Tomaszewicz, 231–9, Somerville, MA: Cascadilla Proceedings Project.

Aitchison, Jean. 2012. *Words in the mind: an introduction to the mental lexicon*. 4th edn. Chichester/Malden, MA: Wiley-Blackwell.

Allan, Donald J. 1980. '*Ἀναγιγνώσκω* and some cognate words'. *CQ* n. s. 30: 244–51.

Allan, Rutger J. 2003. *The middle voice in ancient Greek: a study in polysemy*. Amsterdam: J.C. Gieben.

Allan, Rutger J. 2007. 'Sense and sentence complexity. Sentence structure, sentence connection, and tense-aspect as indicators of narrative mode in Thucydides' *Histories*'. In *The language of literature. Linguistic approaches to classical texts*, edited by Rutger J. Allan and Michel Buijs, 92–121, Leiden/Boston, MA: Brill.

Allan, Rutger J. 2015. 'Experientality and Immersion. Linguistic and narratological aspects of immersive narrative'. Paper presented at the conference *Narrative and Experience in Greco-Roman Antiquity*, Heidelberg.

Allbritton, David W., Gail McKoon, and Roger Ratcliff. 1996. 'Reliability of prosodic cues for resolving syntactic ambiguity'. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 22: 714–35.

Allen, Richard J. and Charles Hulme. 2006. 'Speech and language processing mechanisms in verbal serial recall'. *Journal of Memory and Language* 55: 64–88.

Allen, W. Sidney. 1973. *Accent and rhythm. Prosodic features of Latin and Greek: a study in theory and reconstruction*. Cambridge: Cambridge University Press.

Allen, W. Sidney. 1987. *Vox Graeca*. 3rd edn. Cambridge: Cambridge University Press.

Alloway, Tracy Packiam and Susan Elizabeth Gathercole. 2005. 'The role of sentence recall in reading and language skills of children with learning difficulties'. *Learning and Individual Differences* 15: 271–82.

Alonge, Mark. 2011. 'Greek hymns from performance to stone'. In *Sacred words: orality, literacy, and religion*, edited by André. P. M. H. Lardinois, Josine Blok, and Marc G. M. van der Poel, 217–34, Leiden/Boston, MA: Brill.

Aloni, Antonio. 2001. 'The proem of Simonides' *Plataea Elegy* and the circumstances of its performance'. In *The new Simonides: contexts of praise and desire*, edited by Deborah Dickmann Boedeker and David Sider, 86–105, Oxford/New York: Oxford University Press.

Aloni, Antonio. 2009. 'Elegy: forms, functions and communication'. In *The Cambridge companion to Greek lyric*, edited by Felix Budelmann, 168–88, Cambridge: Cambridge University Press.

Anderson, Carl A. and Keith T. Dix. 2014. '*Λάβε τὸ βυβλίον*: orality and literacy in Aristophanes'. In *Between orality and literacy: communication and adaptation in antiquity*, edited by Ruth Scodel, 77–86, Leiden/Boston, MA: Brill.

Ariel, Mira. 1988. 'Referring and accessibility'. *Journal of Linguistics* 24: 65–87.

Ascani, Alessia. 2002. *Demetrio: Sullo stile*. Milano: Rizzoli.

Askedal, John Ole. 1995. 'Iconicity in the basic serialization rules of modern German'. In *Syntactic iconicity and linguistic freezes: the human dimension*, edited by Marge E. Landsberg, 13–30, Berlin/New York: Mouton de Gruyter.

Atherton, Catherine. 1993. *The Stoics on ambiguity*. Cambridge: Cambridge University Press.

Ausland, Hayden W. 1997. 'On reading Plato mimetically'. *AJPh* 118: 371–416.

Bader, Markus. 1998. 'Prosodic influences on reading syntactically ambiguous sentences'. In *Reanalysis in sentence processing*, edited by Janet Dean Fodor and Fernanda Ferreira, 1–46, Dordrecht: Springer Netherlands.

Bakker, Egbert J. 1993. 'Boundaries, topics, and the structure of discourse an investigation of the ancient Greek particle *dé*'. *StudLang* 17: 275–311.

Bakker, Egbert J. 1997. *Poetry in speech: orality and Homeric discourse*. Ithaca, NY: Cornell University Press.

Bakker, Egbert J. 1998. 'Fiktionalität und Medienwechsel im Altgriechischen: Von Homer zu Thukydides'. In *Verschriftung und Verschriftlichung: Aspekte des Medienwechsels in verschiedenen Kulturen und Epochen*, edited by Christine Ehler and Ursula Schaefer, 57–77, Tübingen: Narr.

Bakker, Egbert J. 1999. 'How oral is oral composition?' In *Signs of orality: the oral tradition and its influence in the Greek and Roman world*, edited by E. Anne Mackay, 29–48, Leiden/Boston, MA: Brill.

Bakker, Egbert J. 2002. 'The making of history: Herodotus' *Historiēs Apodexis*'. In *Brill's companion to Herodotus*, edited by Egbert J. Bakker, Irene J. F. de Jong, and Hans Wees, 1–32, Leiden/Boston, MA: Brill.

Bakker, Egbert J. and Ahuvia Kahane. 1997. *Written voices, spoken signs: tradition, performance, and the epic text*. Cambridge, MA: Harvard University Press.

Bakker, Stéphanie J. 2009. *The noun phrase in Ancient Greek. A functional analysis of the order and articulation of NP constituents in Herodotus*. Leiden/Boston, MA: Brill.

Baratin, Marc and Françoise Desbordes. 1987. 'La "Troisième partie" de l'*Ars Grammatica*'. In *The history of linguistics in the classical period*, edited by Daniel J. Taylor, 41–66, Amsterdam/Philadelphia, PA: John Benjamins.

Barber, Karin. 2007. *The anthropology of texts, persons and publics. Oral and written culture in Africa and beyond*. Cambridge/New York: Cambridge University Press.

Bastiaanse, Roelien. 2011. 'The retrieval and inflection of verbs in the spontaneous speech of fluent aphasic speakers'. *Journal of Neurolinguistics* 24: 163–72.

Battezzato, Luigi. 2009. 'Techniques of reading and textual layout in ancient Greek texts'. *CCJ* 55: 1–23.

Beaman, Karen. 1984. 'Coordination and subordination revisited: syntactic complexity in spoken and written narrative discourse'. In *Coherence in spoken and written discourse*, edited by Deborah Tannen, 45–80, Norwood, NJ: Ablex.

Beck, Frederick G. A. 1964. *Greek education, 450–350 B.C.* London: Methuen.

Becker, Andrew Sprague. 1995. *The shield of Achilles and the poetics of* ekphrasis. Lanham, MD: Rowman & Littlefield.

Beekes, Robert Stephen Paul. 2010. *Etymological dictionary of Greek*. Leiden/Boston, MA: Brill.

Benitez, Eugenio. 1992. 'Argument, rhetoric, and philosophic method: Plato's *Protagoras*'. *Ph&Rh* 25: 222–52.

Beresford, Adam. 2008. 'Nobody's perfect: a new text and interpretation of Simonides *PMG* 542'. *CPh* 103: 237–56.

Bergson, Leif. 1960. *Zur Stellung des Adjektivs in der älteren griechischen Prosa*. Stockholm/Göteborg/Uppsala: Almqvist & Wiksell.

Bernabé, Alberto. 1979. 'Los filósofos presocráticos como autores literarios'. *Emerita* 47: 357–94.

Bers, Victor. 1985. 'Dikastic *thorubos*'. In *Crux: essays in Greek history presented to G.E.M. de Ste. Croix on his 75th birthday*, edited by Paul Cartledge and F. David Harvey, 1–15, London: Duckworth.

Bers, Victor. 2009. Genos dikanikon: *amateur and professional speech in the courtrooms of classical Athens*. Washington/Cambridge, MA: Harvard University Press.

Bertelli, Lucio. 2001. 'Hecataeus: from genealogy to historiography'. In *The historian's craft in the age of Herodotus*, edited by Nino Luraghi, 67–94, Oxford/New York: Oxford University Press.

Bertrand, Nicolas. 2011. 'Unconstrained discontinuity in Homeric Greek: dealing with unmotivated hyperbaton'. Paper presented at the conference *7th International Colloquium on Ancient Greek Linguistics*, Gent.

Biber, Douglas. 1988. *Variation across speech and writing*. Cambridge/New York: Cambridge University Press.

Biber, Douglas. 1989. 'A typology of English texts'. *Linguistics* 27: 3–44.

Biber, Douglas. 1995. *Dimensions of register variation: a cross-linguistic comparison*. Cambridge/New York: Cambridge University Press.

Biber, Douglas. 2009. 'Multi-dimensional approaches'. In *Corpus linguistics: an international handbook*, edited by Anke Lüdeling and Merja Kytö, vol. 2: 822–56, Berlin/New York: Walter de Gruyter.

Biber, Douglas, Susan Conrad, and Randi Reppen. 1998. *Corpus linguistics: investigating language structure and use*. Cambridge/New York: Cambridge University Press.

Blänsdorf, Jürgen. 1967. *Archaische Gedankengänge in den Komödien des Plautus*. Wiesbaden: F. Steiner.

Blass, Friedrich. 1893. *Die attische Beredsamkeit*. 2nd edn. Leipzig: Teubner.

Blondell, Ruby. 2002. *The play of character in Plato's* Dialogues. Cambridge/New York: Cambridge University Press.

Bocci, Giuliano. 2008. 'On the syntax-prosody interface: an analysis of the prosodic properties of postfocal material in Italian and its implications'. *Nanzan Linguistics, Special Issue* 5: 13–42.

Boedeker, Deborah Dickmann. 2001. 'Heroic historiography: Simonides and Herodotus on Plataea'. In *The new Simonides: contexts of praise and desire*, edited by Deborah Dickmann Boedeker and David Sider, 120–34, Oxford/New York: Oxford University Press.

Boedeker, Deborah Dickmann. 2002. 'Epic heritage and mythical patterns in Herodotus'. In *Brill's companion to Herodotus*, edited by Egbert J. Bakker, Irene J. F. de Jong, and Hans Wees, 97–116, Leiden/Boston, MA: Brill.

Boegehold, Alan L. 1995a. 'History and analysis'. In *The lawcourts at Athens: sites, buildings, equipment, procedure, and testimonia*, edited by Alan L. Boegehold, 1–50, Princeton, NJ: American School of Classical Studies at Athens.

Boegehold, Alan L. 1995b. 'Court sites'. In *The lawcourts at Athens: sites, buildings, equipment, procedure, and testimonia*, edited by Alan L. Boegehold, 91–113, Princeton, NJ: American School of Classical Studies at Athens.

Bögels, Sara, Herbert Schriefers, Wietske Vonk, Dorothee J. Chwilla, and Roel Kerkhofs. 2010. 'The interplay between prosody and syntax in sentence

processing: The case of subject- and object-control verbs'. *Journal of Cognitive Neuroscience* 22: 1036–53.

Bonner, Stanley Frederick. 1939. *The literary treatises of Dionysius of Halicarnassus: a study in the development of critical method*. Cambridge: Cambridge University Press.

Bons, Jeroen A. E. 1993. '*Ἀμφιβολία*: Isocrates and written composition'. *Mnemosyne* 46: 160–71.

Bornkessel, Ina, Matthias Schlesewsky, and Angela D. Friederici. 2002. 'Grammar overrides frequency: evidence from the online processing of flexible word order'. *Cognition* 85: B21–B30.

Bowra, Cecil Maurice. 1960. 'Euripides' epinician for Alcibiades'. *Historia* 9: 68–79.

Bowra, Cecil Maurice. 1961. *Greek lyric poetry from Alcman to Simonides*. 2nd edn. Oxford: Clarendon Press.

Brandt-Kobele, Oda-Christina and Barbara Höhle. 2010. 'What asymmetries within comprehension reveal about asymmetries between comprehension and production: the case of verb inflection in language acquisition'. *Lingua* 120: 1910–25.

Brill, Janus. 1873. 'Demosthenes IX, 46 sqq.' *Mnemosyne* 1: 205–8.

Brown, Gillian and George Yule. 1983. *Discourse analysis*. Cambridge/New York: Cambridge University Press.

Bruce, Bertram, Allan Collins, Ann D. Rubin, and Dedre Gentner. 1982. 'Three perspectives on writing'. *Educational Psychologist* 17: 131–45.

Budelmann, Felix. 2009. 'Introducing Greek lyric'. In *The Cambridge companion to Greek lyric*, edited by Felix Budelmann, 1–18, Cambridge/New York: Cambridge University Press.

Buijs, Michel. 2005. *Clause combining in ancient Greek narrative discourse: the distribution of subclauses and participial clauses in Xenophon's* Hellenica *and* Anabasis. Leiden/Boston, MA: Brill.

Burguière, Paul. 1960. *Histoire de l'infinitif en grec*. Paris: Klincksieck.

Büring, Daniel. 2013. 'Syntax and prosody, syntax and meaning'. In *The Cambridge handbook of generative syntax*, edited by Marcel den Dikken, 860–96, Cambridge: Cambridge University Press.

Burns, Alfred. 1981. 'Athenian literacy in the fifth century B.C.' *JHI* 42: 371–87.

Burnyeat, Myles F. 1994. 'Enthymeme: Aristotle on the logic of persuasion'. In *Aristotle's* Rhetoric*: philosophical essays*, edited by David J. Furley and Alexander Nehamas, 3–55, Princeton, NJ: Princeton University Press.

Burton-Roberts, Noel. 1975. 'Nominal apposition'. *Foundations of Language* 13: 391–419.

Canfora, Luciano. 1971. *Demostene: discorso all'Assemblea per ambascerie in Asia e in Grecia (Terza Filippica)*. Bari: Adriatica Editrice.

Canfora, Luciano. 1974. *Discorsi e lettere di Demostene: discorsi all'assemblea*. Torino: UTET.

Canfora, Luciano. 2011. 'Il *corpusculum* degli Epitafi ateniesi'. In *Dicere laudes: elogio, comunicazione, creazione del consenso. Atti del convegno internazionale, Cividale del Friuli, 23–25 settembre 2010*, edited by Gianpaolo Urso, 69–82, Pisa: ETS.

Canfora, Luciano. 2014a. 'Demosthenes und Hypereides: *Ἐπιτάφιοι λόγοι*'. In *Demosthenica libris manu scriptis tradita: Studien zur Textüberlieferung des Corpus Demosthenicum*, edited by Jana Grusková and Herbert Bannert, 81–94, Wien: Verlag der Österreichischen Akademie der Wissenschaften.

Canfora, Luciano. 2014b. 'Textgeschichte des Demosthenes im Wandel der Jahrhunderte'. In *Demosthenica libris manu scriptis tradita: Studien zur Textüberlieferung des Corpus Demosthenicum*, edited by Jana Grusková and Herbert Bannert, 21–52, Wien: Verlag der Österreichischen Akademie der Wissenschaften.

Canfora, Luciano and Aldo Corcella. 1992. 'La letteratura politica e la storiografia'. In *Lo spazio letterario della Grecia antica: la produzione e la circolazione del testo*, edited by Giuseppe Cambiano, Luciano Canfora, and Diego Lanza, vol. I.1: 433–71, Roma: Salerno.

Carawan, Edwin. 2008. 'What the *mnemones* know'. In *Orality, literacy, memory in the ancient Greek and Roman world*, edited by E. Anne Mackay, 163–84, Leiden/Boston, MA: Brill.

Carey, Chris. 1989. *Lysias: selected speeches*. Cambridge: Cambridge University Press.

Carey, Chris. 2000. *Aeschines*. Austin, TX: University of Texas Press.

Carey, Chris. 2007. 'Epideictic oratory'. In *A companion to Greek rhetoric*, edited by Ian Worthington, 236–52, Malden, MA/Oxford: Blackwell.

Carey, Chris. 2009. 'Genre, occasion and performance'. In *The Cambridge companion to Greek lyric*, edited by Felix Budelmann, 21–38, Cambridge: Cambridge University Press.

Carey, Chris and Robert A. Reid. 1985. *Demosthenes: selected private speeches*. Cambridge/New York: Cambridge University Press.

Carlson, Katy. 2009. 'How prosody influences sentence comprehension'. *Language and Linguistics Compass* 3: 1188–200.

Carlson, Katy, Lyn Frazier, and Charles Clifton, Jr 2009. 'How prosody constrains comprehension: a limited effect of prosodic packaging'. *Lingua* 119: 1066–82.

Caron, Jean, Hans Christoph Micko, and Manfred Thüring. 1988. 'Conjunctions and the recall of composite sentences'. *Journal of Memory and Language* 27: 309–23.

Cartledge, Paul. 1997. '"Deep plays": theatre as process in Greek civic life'. In *The Cambridge companion to Greek tragedy*, edited by Patricia E. Easterling, 3–35, Cambridge: Cambridge University Press.

Cassio, Albio Cesare. 1981. 'Attico "volgare" e Ioni in Atene alla fine del 5° secolo a.C.' *AION(ling)* 3: 79–93.

Cassio, Albio Cesare. 1989. 'Sviluppo della prosa dorica e tradizioni occidentali della retorica greca'. In *Tra Sicilia e Magna Grecia: aspetti di interazione culturale nel IV sec a.C.*, edited by Albio Cesare Cassio and Domenico Musti, vol. 11: 133–57, Roma: Edizioni dell'Ateneo.

Cavallo, Guglielmo and Roger Chartier. 1999. 'Introduction'. In *A history of reading in the West*, edited by Guglielmo Cavallo and Roger Chartier, 1–36, Cambridge: Polity Press.

Ceccarelli, Paola. 1996. 'L'Athènes de Périclès: un "Pays de cocagne"? L'idéologie démocratique et l'*αὐτόματος βίος* dans la comédie ancienne'. *QUCC* 54: 109–59.

Cerri, Giovanni. 1991. *Platone sociologo della comunicazione*. Milano: Il Saggiatore.

Chafe, Wallace L. 1982. 'Integration and involvement in speaking, writing and oral literature'. In *Spoken and written language: exploring orality and literacy*, edited by Deborah Tannen, 35–54, Norwood, NJ: Ablex.

Chafe, Wallace L. 1994. *Discourse, consciousness, and time: the flow and displacement of conscious experience in speaking and writing*. Chicago, IL: University of Chicago Press.

Chafe, Wallace L. and Deborah Tannen. 1987. 'The relation between written and spoken language'. *Annual Review of Anthropology* 16: 383–407.

Chanet, Anne-Marie. 1988. 'Objet prépositionnel, prolepse et objet externe'. In *In the footsteps of Raphael Kühner: proceedings of the International Colloquium in commemoration of the 150th anniversary of the publication of Raphael Kühner's Ausführliche Grammatik der griechischen Sprache, II. Theil: Syntaxe, Amsterdam, 1986*, edited by Albert Rijksbaron, Henk A. J. Mulder, and Gerry C. Wakker, 67–97, Amsterdam: J.C. Gieben.

Chaniotis, Angelos. 1988. *Historie und Historiker in den griechischen Inschriften: epigraphische Beiträge zur griechischen Historiographie*. Stuttgart: F. Steiner.

Chantraine, Heinrich. 1963. 'Quadrantal'. In *Paulys Real-Encyclopädie der classischen Altertumswissenschaft*, edited by Georg Wissowa, Wilhelm Kroll, Karl Mittelhaus, and Konrat Ziegler, vol. 24: 667–72, Stuttgart: A. Druckenmüller.

Chen, Evan, Edward Gibson, and Florian Wolf. 2005. 'Online syntactic storage costs in sentence comprehension'. *Journal of Memory and Language* 52: 144–69.

Chiron, Pierre. 1993. *Démétrios: du style*. Paris: Les Belles Lettres.

Chiron, Pierre. 2002. *Rhétorique à Alexandre*. Paris: Les Belles Lettres.

Chiron, Pierre. 2007. 'The Rhetoric to Alexander'. In *A companion to Greek rhetoric*, edited by Ian Worthington, 90–106, Malden, MA/Oxford: Blackwell.

Chiron, Pierre. 2010. 'La figure d'hyperbate'. In *Rhetorica philosophans*, edited by Luc Brisson and Pierre Chiron, 311–35, Paris: J. Vrin.

Cingano, Ettore. 2007. 'Teseo e i Teseidi tra Troia e Atene'. In *L'epos minore, le tradizioni locali e la poesia arcaica: atti dell'incontro di studio, Urbino, 7 giugno 2005*, edited by Paola Bernardini, 91–102, Pisa: Fabrizio Serra.

Clark, Herbert H. and Gregory L. Murphy. 1982. 'Audience design in meaning and reference'. In *Language and comprehension*, edited by Jean-François Le Ny and Walter Kintsch, vol. 9: 287–99, Amsterdam/New York: North-Holland Pub. Co.

Clay, Diskin. 1994. 'The origins of the Socratic dialogue'. In *The Socratic movement*, edited by Paul A. Vander Waerdt, 23–47, Ithaca, NY: Cornell University Press.

Clifton, Charles Jr 2015. 'The roles of phonology in silent reading: a selective review'. In *Explicit and implicit prosody in sentence processing: studies in honor of Janet Dean Fodor*, edited by Lyn Frazier and Edward Gibson, 161–76, Cham: Springer.

Cloché, Paul. 1963. *Isocrate et son temps*. Paris: Les Belles Lettres.

Cole, Thomas. 1991. *The origins of rhetoric in ancient Greece*. Baltimore, MD/London: Johns Hopkins University Press.

Colin, Gaston. 1917. 'Les sept derniers chapitres de l'*Ἀθηναίων Πολιτεία*'. *REG* 30: 20–87.

Collins, James Henderson. 2012. 'Prompts for participation in early philosophical texts'. In *Orality, literacy and performance in the ancient world*, edited by Elizabeth Minchin, 151–82, Leiden/Boston, MA: Brill.

Cooper, Craig R. 2004. 'Demosthenes actor on the political and forensic stage'. In *Oral performance and its context*, edited by Christopher John Mackie, 145–61, Leiden/Boston, MA: Brill.

Cooper, Guy L. 1998. *Greek syntax: Attic Greek prose syntax*. Ann Arbor, MI: University of Michigan Press.

Cooper, William E. and Gayle V. Klouda. 1995. 'The psychological basis of syntactic iconicity'. In *Syntactic iconicity and linguistic freezes: the human dimension*, edited by Marge E. Landsberg, 331–41, Berlin/New York: Mouton de Gruyter.

Cope, Edward Meredith. 1867. *An introduction to Aristotle's* Rhetoric. London: Macmillan.

Corcella, Aldo. 1992. 'Geografia e historie'. In *Lo spazio letterario della Grecia antica: La produzione e la circolazione del testo*, edited by Giuseppe Cambiano, Luciano Canfora, and Diego Lanza, vol. I.1: 265–77, Roma: Salerno.

Coventry, Lucinda. 1989. 'Philosophy and rhetoric in the *Menexenus*'. *JHS* 109: 1–15.

Craik, Elizabeth Mary. 2001. 'Plato and medical texts: *Symposium* 185c–193d'. *CQ* n. s. 51: 109–14.

Crane, Gregory. 1996. *The blinded eye. Thucydides and the new written word*. Lanham, MD: Rowman & Littlefield.

Croiset, Maurice. 1955. *Démosthène: Harangues. Tome II*. Paris: Les Belles Lettres.

Crusius, Otto. 1902. 'Die *Anagnostikoi* (Exkurs zu Aristot. *Rhet.* III 12)'. In *Festschrift Theodor Gomperz dargebracht zum siebzigsten Geburtstage am 29. März 1902*, edited by Moritz von Schwind, 381–7, Wien: Alfred Hölder.

Crystal, David. 2006. *Language and the internet*. 2nd edn. Cambridge/New York: Cambridge University Press.

Crystal, David. 2010. 'The changing nature of text: a linguistic perspective'. In *Text comparison and digital creativity: the production of presence and meaning in digital text scholarship*, edited by Wido Th. van Peursen, Ernst D. Thoutenhoofd, and Adriaan van der Weel, 229–51, Leiden/Boston, MA: Brill.

Csapo, Eric and William J. Slater. 1995. *The context of ancient drama*. Ann Arbor, MI: University of Michigan Press.

Currie, Bruno. 2004. 'Reperformance scenarios for Pindar's Odes'. In *Oral performance and its context*, edited by Christopher John Mackie, 49–69, Leiden/Boston, MA: Brill.

Dąbrowska, Ewa. 2004. *Language, mind and brain: some psychological and neurological constraints on theories of grammar*. Edinburgh: Edinburgh University Press.

Dancey, Christine P. and John Reidy. 2007. *Statistics without maths for psychology*. 4th edn. Harlow/New York: Pearson/Prentice Hall.

De Cuypere, Ludovic. 2008. *Limiting the iconic: from the metatheoretical foundations to the creative possibilities of iconicity in language*. Amsterdam/Philadelphia, PA: John Benjamins.

de Jong, Peter F., Daniëlle J. L. Bitter, Margot van Setten, and Eva Marinus. 2009. 'Does phonological recoding occur during silent reading, and is it necessary for orthographic learning?' *Journal of Experimental Child Psychology* 104: 267–82.

de Jonge, Casper Constantijn. 2007. 'From Demetrius to Dik. Ancient and modern views on Greek and Latin word order'. In *The language of literature. Linguistic approaches to classical texts*, edited by Rutger J. Allan and Michel Buijs, 211–32, Leiden/Boston, MA: Brill.

de Jonge, Casper Constantijn. 2008. *Between grammar and rhetoric. Dionysius of Halicarnassus on language, linguistics and literature*. Leiden/Boston, MA: Brill.

De Robertis, Francesca. 2015. *Per la storia del testo di Demostene: i papiri delle Filippiche*. Bari: Dedalo.

de Roo, Esterella. 2001. 'Root nonfinite and finite utterances in child language and agrammatic speech'. *Brain and Language* 77: 398–406.

de Roo, Esterella, Herman Kolk, and Ben Hofstede. 2003. 'Structural properties of syntactically reduced speech: a comparison of normal speakers and Broca's aphasics'. *Brain and Language* 86: 99–115.

de Strycker, Emile and Simon R. Slings. 1994. *Plato's* Apology of Socrates*: a literary and philosophical study with a running commentary*. Leiden/New York: Brill.

de Vries, Gerrit Jacob. 1984. 'Platonic Dialogues performed?' *Mnemosyne* 37: 143–5.

Dean-Jones, Lesley. 2003. 'Literacy and the charlatan in ancient Greek medicine'. In *Written texts and the rise of literate culture in ancient Greece*, edited by Harvey Yunis, 97–121, Cambridge: Cambridge University Press.

DeDe, Gayle. 2010. 'Utilization of prosodic information in syntactic ambiguity resolution'. *Journal of Psycholinguistic Research* 39: 345–74.

Dehé, Nicole. 2007. 'The relation between syntactic and prosodic parenthesis'. In *Parentheticals*, edited by Nicole Dehé and Yordanka Kavalova, vol. 106: 261–84, Amsterdam/Philadelphia, PA: John Benjamins.

Dehé, Nicole and Yordanka Kavalova. 2007. 'Parentheticals: an introduction'. In *Parentheticals*, edited by Nicole Dehé and Yordanka Kavalova, vol. 106: 1–22, Amsterdam/Philadelphia, PA: John Benjamins.

Del Corso, Lucio. 2010. 'Libri di scuola e sussidi didattici nel mondo antico'. In *Libri di scuola e pratiche didattiche: dall'antichità al Rinascimento: atti del convegno internazionale di studi, Cassino, 7-10 maggio 2008*, edited by Lucio Del Corso and Oronzo Pecere, 71–110, Cassino: Università di Cassino.

Delebecque, Édouard. 1957. *Essai sur la vie de Xénophon*. Paris: Klincksieck.

Dellwo, Volker and Petra Wagner. 2003. 'Relationships between rhythm and speech rate'. In *Proceedings of the 15th International Congress of the Phonetic Sciences*, edited by Maria-Josep Solé, Daniel Recasens, and Joaquín Romero, 471–4, Barcelona: Causal Productions.

Denniston, John Dewar. 1950. *Greek prose style*. 2nd edn. London: Duckworth.

Denniston, John Dewar. 1954. *The Greek particles*. Oxford: Clarendon Press.

Detienne, Marcel. 1986. *The creation of mythology*, translated by Margaret Cook. Chicago, IL: University of Chicago Press.

Devine, Andrew Mackay and Laurence D. Stephens. 1993. 'Evidence from experimental psychology for the rhythm and metre of Greek verse'. *TAPhA* 123: 379–403.

Devine, Andrew Mackay and Laurence D. Stephens. 1994. *The prosody of Greek speech*. New York/Oxford: Oxford University Press.

Devine, Andrew Mackay and Laurence D. Stephens. 2000. *Discontinuous syntax: hyperbaton in Greek*. New York/Oxford: Oxford University Press.

Devine, Andrew Mackay and Laurence D. Stephens. 2006. *Latin word order: structured meaning and information*. Oxford/New York: Oxford University Press.

Dickey, Eleanor. 2007. *Ancient Greek scholarship*. New York/Oxford: Oxford University Press.

Dicks, David R. 1959. 'Thales'. *CQ* n. s. 9: 294–309.

Dik, Helma. 1995. *Word order in ancient Greek: a pragmatic account of word order variation in Herodotus*. Amsterdam: J.C. Gieben.

Dik, Helma. 2007. *Word order in Greek tragic dialogue*. Oxford/New York: Oxford University Press.

Dik, Simon C. 1989. *The theory of functional grammar. Part I: The structure of the clause*. Dordrecht/Providence, RI: Foris Publications.

Dorjahn, Alfred P. 1947. 'On Demosthenes' ability to speak extemporaneously'. *TAPhA* 78: 69–76.

Dorjahn, Alfred P. 1950. 'A further study on Demosthenes' ability to speak extemporaneously'. *TAPhA* 81: 9–15.

Dorjahn, Alfred P. 1952. 'A third study on Demosthenes' ability to speak extemporaneously'. *TAPhA* 83: 164–71.

Dorjahn, Alfred P. 1955. 'A fourth study on Demosthenes' ability to speak extemporaneously'. *CPh* 50: 191–3.

Dorjahn, Alfred P. 1957. 'Extemporaneous elements in certain orations and the prooemia of Demosthenes'. *AJPh* 78: 287–96.

Dorjahn, Alfred P. and William D. Fairchild. 1966. 'Extemporaneous elements in the orations of Lysias'. *CB* 43: 17–26.

Dorjahn, Alfred P. and William D. Fairchild. 1967. 'Isocrates and improvisation'. *CB* 44: 6–10.

Dorjahn, Alfred P. and William D. Fairchild. 1970. 'Extemporaneous elements in the orations of Aeschines'. *CB* 46: 35–37, 47.

Dorjahn, Alfred P. and William D. Fairchild. 1972a. 'Extemporaneous elements in some minor Attic orators'. *CB* 48: 62–3.

Dorjahn, Alfred P. and William D. Fairchild. 1972b. 'Andocides and improvisation'. *CB* 49: 9–11.

Dover, Kenneth James. 1950. 'The chronology of Antiphon's speeches'. *CQ* 44: 44–60.

Dover, Kenneth James. 1960. *Greek word order*. Cambridge: Cambridge University Press.

Dover, Kenneth James. 1968. *Lysias and the* Corpus Lysiacum. Berkeley, CA: University of California Press.

Dover, Kenneth James. 1997. *The evolution of Greek prose style*. Oxford/New York: Oxford University Press.

Downing, Laura J. 2006. 'The prosody and syntax of focus in Chitumbuka'. *ZAS papers in linguistics* 43: 55–79.

Dufour, Médéric and André Wartelle. 1973. *Aristote:* Rhétorique. *Tome III, Livre 3*. Paris: Les Belles Lettres.

Duhoux, Yves. 1997. 'Grec écrit et grec parlé. Une étude contrastive des particules aux Ve-IVe siècles'. In *New approaches to Greek particles:*

proceedings of the colloquium held in Amsterdam, January 4-6, 1996, to honour C.J. Ruijgh on the occasion of his retirement, edited by Albert Rijksbaron, 15–48, Amsterdam: J.C. Gieben.

Duhoux, Yves. 2006. 'Les particules: une classe de mots à supprimer en grec ancien?' In *World classes and related topics in ancient Greek*, edited by Emilio Crespo, Jesús de la Villa, and Antonio R. Revuelta, 519–36, Louvain-la-Neuve: Peeters.

Duncan, Anne. 2006. *Performance and identity in the classical world*. Cambridge/New York: Cambridge University Press.

Duranti, Alessandro. 1997. *Linguistic anthropology*. Cambridge/New York: Cambridge University Press.

Easterling, Patricia E. 1997. 'Form and performance'. In *The Cambridge companion to Greek tragedy*, edited by Patricia E. Easterling, 151–77, Cambridge: Cambridge University Press.

Edwards, Michael. 1995. *Andocides*. Warminster: Aris & Phillips.

Endress, Ansgar D. and Marc D. Hauser. 2010. 'Word segmentation with universal prosodic cues'. *Cognitive Psychology* 61: 177–99.

Fedorenko, Evelina, Edward Gibson, and Douglas Rohde. 2006. 'The nature of working memory capacity in sentence comprehension: Evidence against domain-specific working memory resources'. *Journal of Memory and Language* 54: 541–53.

Ferguson, Charles A. 1994. 'Dialect, register, and genre: working assumptions about conventionalization'. In *Sociolinguistic perspectives on register*, edited by Douglas Biber and Edward Finegan, 15–30, New York/Oxford: Oxford University Press.

Finkelberg, Margalit. 2007. 'Elitist orality and the triviality of writing'. In *Politics of orality*, edited by Craig R. Cooper, 293–305, Leiden: Brill.

Finnegan, Ruth H. 1979. *Oral poetry: its nature, significance and social context*. Cambridge: Cambridge University Press.

Finnegan, Ruth H. 1988. *Literacy and orality: studies in the technology of communication*. Oxford/New York: Blackwell.

Flashar, Hellmut. 1969. *Der Epitaphios des Perikles: seine Funktion im Geschichtswerk des Thukydides*. Heidelberg: C. Winter.

Fletcher, Janet. 2010. 'The prosody of speech: timing and rhythm'. In *The handbook of phonetic sciences*, edited by William J. Hardcastle, John Laver, and Fiona E. Gibbon, 523–602. 2nd edn. Chichester/Malden, MA: Wiley-Blackwell.

Flory, Stewart. 1980. 'Who read Herodotus' *Histories*?' *AJPh* 101: 12–28.

Föllinger, Sabine. 1993. 'Mündlichkeit in der Schriftlichkeit als Ausdruck wissenschaftlicher Methode bei Aristoteles'. In *Vermittlung und Tradierung von Wissen in der griechischen Kultur*, edited by Wolfgang Kullmann and Jochen Althoff, 263–80, Tübingen: Narr.

Ford, Andrew Laughlin. 1999. 'Reading Homer from the rostrum: poems and laws in Aeschines'. In *Performance culture and Athenian democracy*, edited by Simon Goldhill and Robin Osborne, 231–56, Cambridge/New York: Cambridge University Press.

Ford, Andrew Laughlin. 2002. *The origins of criticism: literary culture and poetic theory in classical Greece*. Princeton, NJ: Princeton University Press.

Ford, Andrew Laughlin. 2003. 'From letters to literature: reading the "song culture" of classical Greece'. In *Written texts and the rise of literate culture in ancient Greece*, edited by Harvey Yunis, 15–37, Cambridge: Cambridge University Press.

Fortenbaugh, William W. 1986. 'Aristotle's Platonic attitude toward delivery'. *Ph&Rh* 19: 242–54.

Fougeron, Irina. 2006. 'Intonation and syntax'. In *Encyclopedia of language & linguistics*, edited by Keith Brown, vol. 8: 788–806. 2nd edn. Oxford: Elsevier.

Fowler, Robert L. 1982. 'Aristotle on the period (*Rhet.* 3. 9)'. *CQ* n. s. 32: 89–99.

Fowler, Robert L. 1999. 'The authors named Pherecydes'. *Mnemosyne* 52: 1–15.

Fowler, Robert L. 2001. 'Early *Historiē* and literacy'. In *The historian's craft in the age of Herodotus*, edited by Nino Luraghi, 95–115, Oxford/New York: Oxford University Press.

Fraenkel, Eduard. 1928. *Iktus und Akzent im lateinischen Sprechvers*. Berlin: Weidmann.

Fraenkel, Eduard. 1933. 'Kolon und Satz: Beobachtungen zur Gliederung des antiken Satzes, I und II'. *NGG* Phil.-Hist. Klasse: 197–213, 319–54.

Fraenkel, Eduard. 1964. 'Nachträge zu «Kolon und Satz, II»'. In *Kleine Beiträge zur klassischen Philologie*, vol. 1: 131–9, Roma: Edizioni di storia e letteratura.

Frazier, Lyn, Katy Carlson, and Charles Clifton, Jr 2006. 'Prosodic phrasing is central to language comprehension'. *Trends in Cognitive Sciences* 10: 244–9.

Frede, Michael. 1992. 'Plato's arguments and the dialogue form'. In *Methods of interpreting Plato*, edited by James Carl Klagge and Nicholas D. Smith, 201–19, Oxford: Clarendon Press.

Fritz, Kurt von. 1938. 'Pherekydes'. In *Paulys Real-Encyclopädie der classischen Altertumswissenschaft*, edited by Georg Wissowa and Wilhelm Kroll, vol. 18/2: 2025–33, Stuttgart: A. Druckenmüller.

Gagarin, Michael. 1997. *Antiphon: the speeches*. Cambridge/New York: Cambridge University Press.

Gagarin, Michael. 1999. 'The orality of Greek oratory'. In *Signs of orality: the oral tradition and its influence in the Greek and Roman world*, edited by E. Anne Mackay, 163–80, Leiden/Boston, MA: Brill.

Gagarin, Michael. 2002. *Antiphon the Athenian. Oratory, law, and justice in the age of the Sophists*. Austin, TX: University of Texas Press.

Gagarin, Michael. 2003. 'Letters of the law: written texts in archaic Greek law'. In *Written texts and the rise of literate culture in ancient Greece*, edited by Harvey Yunis, 59–77, Cambridge: Cambridge University Press.

Gagarin, Michael. 2008. *Writing Greek law*. Cambridge/New York: Cambridge University Press.

Gathercole, Susan Elizabeth. 2008. 'Working memory'. In *Learning and memory: a comprehensive reference*, edited by John H. Byrne and Henry L. Roediger, vol. 2: 33–51. Oxford/San Diego, CA: Elsevier.

Gavrilov, Aleksandr Konstantinovic. 1997. 'Techniques of reading in classical antiquity'. *CQ* n. s. 47: 56–73.

Gehrke, Hans-Joachim. 1998. 'Verschriftung und Verschriftlichung im sozialen und politischen Kontext. Das archaische und klassische Griechenland'. In *Verschriftung und Verschriftlichung: Aspekte des Medienwechsels in verschiedenen Kulturen und Epochen*, edited by Christine Ehler and Ursula Schaefer, 40–56, Tübingen: Narr.

Gibson, Craig A. 2002. *Interpreting a classic: Demosthenes and his ancient commentators*. Berkeley, CA: University of California Press.

Gibson, Edward. 1998. 'Linguistic complexity: locality of syntactic dependencies'. *Cognition* 68: 1–76.

Gibson, Edward. 2000. 'The dependency locality theory: a distance-based theory of linguistic complexity'. In *Image, language, brain*, edited by Alec Marantz, Yasushi Miyashita, and Wayne A. O'Neil, 95–126, Cambridge, MA/London: MIT Press.

Gigante, Marcello. 1960. 'Il discorso olimpico di Lisia'. In *Studi in onore di L. Castiglioni*, 373–406, Firenze: Sansoni.

Golden, Mark. 1990. *Children and childhood in classical Athens*. Baltimore, MD: Johns Hopkins University Press.

Goldhill, Simon. 1997. 'The audience of Athenian tragedy'. In *The Cambridge companion to Greek tragedy*, edited by Patricia E. Easterling, 54–68, Cambridge: Cambridge University Press.

Goldstein, David Michael. 2010. *Wackernagel's Law in fifth-century Greek*. Diss. Berkeley, CA.

Gordon, Peter C., Randall Hendrick, Marcus Johnson, and Yoonhyoung Lee. 2006. 'Similarity-based interference during language comprehension: evidence from eye tracking during reading'. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 32: 1304–21.

Graff, Richard. 2001. 'Reading and the "written style" in Aristotle's *Rhetoric*'. *RSQ* 31: 19–44.

Granger, Herbert. 2004. 'Argumentation and Heraclitus' book'. *OSAPh* 26: 1–17.

Granger, Herbert. 2007. 'Poetry and prose: Xenophanes of Colophon'. *TAPhA* 137: 403–33.

Granger, Herbert. 2013. 'Early natural theology: the purification of the divine nature'. In *Doctrine and doxography: studies on Heraclitus and Pythagoras*, edited by David Sider and Dirk Obbink, 163–200, Berlin/Boston, MA: De Gruyter.

Gray, Vivienne J. 1992. 'Xenophon's *Symposion*: the display of wisdom'. *Hermes* 120: 58–75.

Grice, H. Paul. 1989. *Studies in the way of words*. Cambridge, MA: Harvard University Press.

Grinstead, John, Teresa Pratt, and Dan McCurley. 2009. 'Comprehension of prototypical tense and aspect combinations in child Spanish'. *Studies in Hispanic and Lusophone Linguistics* 2: 435–50.

Grzybek, Peter, Emmerich Kelih, and Ernst Stadlober. 2008. 'The relation between word length and sentence length: an intra-systemic perspective in the core data structure'. *Glottometrics* 16: 111–21.

Guasti, Maria Teresa. 1993. 'Verb syntax in Italian child grammar: finite and nonfinite verbs'. *Language Acquisition* 3: 1–40.

Häcki Buhofer, Annelies. 2000. 'Mediale Voraussetzung: Bedingungen von Schriftlichkeit allgemein'. In *Text- und Gesprächslinguistik: ein internationales Handbuch zeitgenössischer Forschung = Linguistics of text and conversation*, edited by Klaus Brinker, Gerd Antos, Wolfgang Heinemann, and Sven F. Sager, 251–61, Berlin/New York: Walter de Gruyter.

Hagedorn, Dieter. 1964. *Zur Ideenlehre des Hermogenes*. Göttingen: Vandenhoeck & Ruprecht.

Haiman, John. 2006. 'Iconicity'. In *Encyclopedia of language & linguistics*, edited by Keith Brown, vol. 5: 457–61. 2nd edn. Oxford: Elsevier.

Hajdú, István. 2002. *Kommentar zur 4. Philippischen Rede des Demosthenes*. Berlin/New York: De Gruyter.

Halford, Brigitte K. 1990. 'The complexity of oral syntax'. In *Syntax gesprochener Sprachen*, edited by Brigitte K. Halford and Herbert Pilch, 33–43, Tübingen: Narr.

Hall, Edith. 1995. 'Lawcourt dramas: the power of performance in Greek forensic oratory'. *BICS* 40: 39–58.

Hamilton, Stephen T. and Jane V. Oakhill. 2014. 'Establishing coherence across sentence boundaries: an individual differences approach'. *Language, Cognition and Neuroscience* 29: 1240–8.

Hansen, Mogens Herman. 1984. 'Two notes on Demosthenes' symbouleutic speeches'. *C&M* 35: 57–70.

Hansen, Mogens Herman. 1991. *The Athenian democracy in the age of Demosthenes*. Oxford: Blackwell.

Hansen, Mogens Herman. 1993. 'The battle exhortation in ancient historiography. Fact or fiction?' *Historia* 42: 161–80.

Harding, Phillip. 1994. *Androtion and the Atthis*. Oxford: Clarendon Press.

Harding, Phillip. 2006. *Didymos: On Demosthenes*. Oxford: Clarendon Press.

Harris, Edward Monroe. 2008. *Demosthenes: Speeches 20–22*. Austin, TX: University of Texas Press.

Harris, Roy. 1995. *Signs of writing*. London/New York: Routledge.

Harris, William Vernon. 1989. *Ancient literacy*. Cambridge, MA/London: Harvard University Press.

Hartwig, Andrew. 2014. 'The evolution of comedy in the fourth century'. In *Greek theatre in the fourth century B.C.*, edited by Eric Csapo, Hans Rupprecht Goette, J. Richard Green, and Peter Wilson, 207–27, Berlin: De Gruyter.

Haug, Dag Trygve Truslew. 2010. 'PROIEL guidelines for annotation'. Retrieved 31 May 2016, from <http://folk.uio.no/daghaug/syntactic_guidelines.pdf>.

Haupt, Friederike S., Matthias Schlesewsky, Dietmar Roehm, Angela D. Friederici, and Ina Bornkessel-Schlesewsky. 2008. 'The status of subject–object reanalyses in the language comprehension architecture'. *Journal of Memory and Language* 59: 54–96.

Hawke, Jason G. 2003. '*Written texts and the rise of literate culture in ancient Greece*, by Harvey Yunis'. *BMCRev* July 2003.

Hawkins, John. 2007. 'Processing typology and why psychologists need to know about it'. *New Ideas in Psychology* 25: 87–107.

Heath, Malcolm. 2004. *Menander: a rhetor in context*. Oxford/New York: Oxford University Press.

Hemforth, Barbara, Susana Fernandez, Charles Clifton, Jr, Lyn Frazier, Lars Konieczny, and Michael Walter. 2015. 'Relative clause attachment in German, English, Spanish and French: effects of position and length'. *Lingua* 166: 43–64.

Hengeveld, Kees and J. Lachlan Mackenzie. 2008. *Functional discourse grammar: a typologically-based theory of language structure*. Oxford/New York: Oxford University Press.

Heringa, Herman. 2012. 'A multidominance approach to appositional constructions'. *Lingua* 122: 554–81.

Herrman, Judson. 2009. *Hyperides: funeral oration*. New York/Oxford: Oxford University Press.

Hirotani, Masako, Lyn Frazier, and Keith Rayner. 2006. 'Punctuation and intonation effects on clause and sentence wrap-up: evidence from eye movements'. *Journal of Memory and Language* 54: 425–43.

Hobden, Fiona. 2005. 'Reading Xenophon's *Symposium*'. *Ramus* 34: 93–111.

Hoffer, Stanley. 2007. 'The use of adjective interlacing (double hyperbaton) in Latin poetry'. *HSPh* 103: 299–340.

Hoffmann, Ludger. 1998. 'Parenthesen'. *Linguistische Berichte* 175: 299–328.

Honko, Lauri. 2000. 'Text as process and practice: the textualization of oral epics'. In *Textualization of oral epics*, edited by Lauri Honko, 3–54, Berlin/New York: Mouton de Gruyter.

Hornblower, Simon. 1987. *Thucydides*. London: Duckworth.

Hornblower, Simon. 1995. 'The fourth-century and Hellenistic reception of Thucydides'. *JHS* 115: 47–68.

Horrocks, Geoffrey. 2010. *Greek. A history of the language and its speakers*. 2nd edn. Chichester/Malden, MA: Wiley-Blackwell.

Hubbard, Thomas K. 2008. 'Getting the last word: publication of political oratory as an instrument of historical revisionism'. In *Orality, literacy, memory in the ancient Greek and Roman world*, edited by E. Anne Mackay, 185–202, Leiden/Boston, MA: Brill.

Huck, Geoffrey J. and Almerindo E. Ojeda. 1987. *Discontinuous constituency*. Orlando, FL: Academic Press.

Hudson-Williams, Harri Llwyd. 1949. 'Isocrates and recitations'. *CQ* 43: 65–9.

Hulme, Charles, George Stuart, Gordon D. A. Brown, and Caroline Morin. 2003. 'High-and low-frequency words are recalled equally well in alternating lists: evidence for associative effects in serial recall'. *Journal of Memory and Language* 49: 500–18.

Hult, Karin. 1990. *Syntactic variation in Greek of the 5th century A.D.* Göteborg: Acta Universitatis Gothoburgensis.

Humbert, Jean. 1960. *Syntaxe grecque*. 3rd edn. Paris: Klincksieck.

Hunston, Susan. 2008. 'Collection strategies and design decisions'. In *Corpus linguistics: an international handbook*, edited by Anke Lüdeling and Merja Kytö, vol. 1: 154–68, Berlin/New York: Walter de Gruyter.

Hutchinson, Gregory O. 2008. *Talking books: readings in Hellenistic and Roman books of poetry*. Oxford/New York: Oxford University Press.

Huxley, George Leonard. 1969. *Greek epic poetry from Eumelos to Panyassis*. London: Faber and Faber.

Huxley, George Leonard. 1973. 'The date of Pherekydes of Athens'. *GRBS* 14: 137–43.

Hwang, Hyekyung and Karsten Steinhauer. 2011. 'Phrase length matters: the interplay between implicit prosody and syntax in Korean "garden path" sentences'. *Journal of Cognitive Neuroscience* 23: 3555–75.

Hyams, Nina. 2005. 'Child non-finite clauses and the mood-aspect connection'. In *Aspectual inquiries*, 293–315, Dordrecht: Springer Netherlands.

Hymes, Dell H. 1972. 'Models of the interaction of language and social life'. In *Directions in sociolinguistics; the ethnography of communication*, edited by John J. Gumperz and Dell H. Hymes, 35–71, New York: Holt, Rinehart and Winston.

Hymes, Dell H. 1974. *Foundations in sociolinguistics: an ethnographic approach*. Philadelphia, PA: University of Pennsylvania Press.

Hyönä, Jukka, Minna Koski, and Alexander Pollatsek. 2015. 'Identifying existing and novel compound words in reading Finnish: an eye movement study'. Paper presented at the conference *NetWordS 2015*, Pisa.

Hyönä, Jukka and Seppo Vainio. 2009. 'Sentence parsing in a morphologically rich language—Finnish'. *Language and Linguistics Compass* 3: 719–33.

Ieranò, Giorgio. 2013. '"One who is fought over by all the tribes". The dithyrambic poet and the city of Athens'. In *Dithyramb in context*, edited by Barbara Kowalzig and Peter Wilson, 368–86, Oxford: Oxford University Press.

Iglesias Zoido, Juan Carlos. 2007. 'The battle exhortation in ancient rhetoric'. *Rhetorica* 25: 141–58.

Innes, Doreen C. 1985. 'Theophrastus and the theory of style'. In *Theophrastus of Eresus: on his life and work*, edited by William W. Fortenbaugh, Pamela M. Huby, and A. A. Long, 251–67, New Brunswick, NJ: Transaction Books.

Innes, Doreen C. 1994. 'Period and colon: theory and example in Demetrius and Longinus'. In *Peripatetic rhetoric after Aristotle*, edited by William W. Fortenbaugh and David C. Mirhady, 36–53, New Brunswick, NJ/London: Transaction Publishers.

Innes, Doreen C. 2007. 'Aristotle: the written and the performative styles'. In *Influences on Peripatetic rhetoric. Essays in honor of William W. Fortenbaugh*, edited by David C. Mirhady, 151–68, Leiden/Boston, MA: Brill.

Jacob, Christian. 1988. 'Inscrire la terre habitée sur une tablette: réflexions sur la fonction des cartes géographiques en Grèce ancienne'. In *Les savoirs de l'écriture. En Grèce ancienne*, edited by Marcel Detienne, 273–304, Villeneuve-d'Ascq: Presses universitaires de Lille.

Jacoby, Felix. 1947. 'The first Athenian prose writer'. *Mnemosyne* 13: 13–64.

Jacoby, Felix. 1949. *Atthis. The local chronicles of ancient Athens*. Oxford: Clarendon Press.

Jäger, Lena, Zhong Chen, Qiang Li, Chien-Jer Charles Lin, and Shravan Vasishth. 2015. 'The subject-relative advantage in Chinese: evidence for expectation-based processing'. *Journal of Memory and Language* 79–80: 97–120.

Janko, Richard. 1987. *Aristotle: Poetics I*. Indianapolis, IN: Hackett Pub. Co.

Janko, Richard. 1998. 'The Homeric poems as oral dictated texts'. *CQ* n. s. 48: 1–13.

Ji, Shaojun. 2010. 'The iconicity assumption and the functional distribution of English temporal adverbial clauses: a textual perspective'. *Journal of Pragmatics* 42: 3163–71.

Jim, Theodora S. F. 2011. '*Literacy and democracy in fifth-century Athens*, by Anna Missiou'. *BMCRev* November 2011.

Jiménez López, M. Dolores. 2006. 'Persuadir en griego: el marco predicativo de *πείθω*'. In *World classes and related topics in ancient Greek*, edited by Emilio Crespo, Jesús de la Villa, and Antonio R. Revuelta, 163–91, Louvain-la-Neuve: Peeters.

Johnson, David M. 2005. 'Xenophon at his most Socratic (*Memorabilia* 4.2)'. *OSAPh* 29: 39–73.

Johnson, William A. 1994. 'Oral performance and the composition of Herodotus' *Histories*'. *GRBS* 35: 229–54.

Jones, Frank Pierce. 1939. *The* ab urbe condita *construction in Greek: a study in the classification of the participle*. Baltimore, MD: Linguistic Society of America.

Jones, Nicholas F. 2004. *Rural Athens under the Democracy*. Philadelphia, PA: University of Pennsylvania Press.

Jouanna, Jacques. 1992. *Hippocrate*. Paris: Fayard.

Jun, Sun-Ah and Jason Bishop. 2015. 'Prominence in relative clause attachment: evidence from prosodic priming'. In *Explicit and implicit prosody in sentence processing: studies in honor of Janet Dean Fodor*, edited by Lyn Frazier and Edward Gibson, 217–40, Cham: Springer.

Juola, Patrick. 2008. 'Assessing linguistic complexity'. In *Language complexity: typology, contact, change*, edited by Matti Miestamo, Kaius Sinnemäki, and Fred Karlsson, 89–108, Amsterdam/Philadelphia, PA: John Benjamins.

Kadota, Shuhei. 1987. 'The role of prosody in silent reading'. *Language Sciences* 9: 185–206.

Kahn, Charles H. 1963. 'Plato's funeral oration: the motive of the *Menexenus*'. *CPh* 58: 220–34.

Kahn, Charles H. 1996. *Plato and the Socratic dialogue*. Cambridge: Cambridge University Press.

Kahn, Charles H. 2003a. *The verb 'be' in ancient Greek*. Indianapolis, IN: Hackett Pub. Co.

Kahn, Charles H. 2003b. 'Writing philosophy: prose and poetry from Thales to Plato'. In *Written texts and the rise of literate culture in ancient Greece*, edited by Harvey Yunis, 139–61, Cambridge: Cambridge University Press.

Kaiser, Elsi and John C. Trueswell. 2004. 'The role of discourse context in the processing of a flexible word-order language'. *Cognition* 94: 113–47.

Kaltenböck, Gunther. 2005. 'Charting the boundaries of syntax: a taxonomy of spoken parenthetical clauses'. *Vienna English Working Papers* 14: 21–53.

Karlsson, Fred. 2007. 'Constraints on multiple center-embedding of clauses'. *Journal of Linguistics* 43: 365–92.

Karvounis, Christos. 2002. *Demosthenes: Studien zu den Demegorien orr. XIV, XVI, XV, IV, I, II, III*. Tübingen: Narr.

Kavalova, Yordanka. 2007. '*And*-parenthetical clauses'. In *Parentheticals*, edited by Nicole Dehé and Yordanka Kavalova, vol. 106: 145–72, Amsterdam/Philadelphia, PA: John Benjamins.

Keil, Bruno. 1902. *Anonymus argentinensis: Fragmente zur Geschichte des perikleischen Athen aus einem Strassburger Papyrus*. Strassburg: K. Trübner.

Kelih, Emmerich and Peter Grzybek. 2005. 'Satzlänge: Definitionen, Häufigkeiten, Modelle (am Beispiel slowenischer Prosatexte)'. *LDV Forum* 20: 31–51.

Kellogg, Ronald Thomas. 1994. *The psychology of writing*. New York/Oxford: Oxford University Press.

Kelly, Douglas. 1996. 'Oral Xenophon'. In *Voice into text: orality and literacy in ancient Greece*, edited by Ian Worthington, 149–63, Leiden: Brill.

Kempen, Gerard and Karin Harbusch. 2003. 'An artificial opposition between grammaticality and frequency: comment on Bornkessel, Schlesewsky, and Friederici (2002)'. *Cognition* 90: 205–10.

Kennedy, George Alexander. 1958. 'The oratory of Andocides'. *AJPh* 79: 32–43.

Kennedy, George Alexander. 1963. *The art of persuasion in Greece*. Princeton, NJ: Princeton University Press.

Kennedy, George Alexander. 2003. *Progymnasmata: Greek textbooks of prose composition and rhetoric*. Leiden/Boston, MA: Brill.

Kennedy, Rebecca Futo. 2006. 'Justice, geography and empire in Aeschylus' *Eumenides*'. *ClAnt* 25: 35–72.

Kentner, Gerrit. 2012. 'Linguistic rhythm guides parsing decisions in written sentence comprehension'. *Cognition* 123: 1–20.

Kerferd, George Briscoe. 1981. *The sophistic movement*. Cambridge: Cambridge University Press.

Kibrik, Andrej A. 2011. *Reference in discourse*. Oxford/New York: Oxford University Press.

Kiparsky, Paul. 2012. 'Greek anaphora in cross-linguistic perspective'. *Journal of Greek Linguistics* 12: 84–117.

Kirchner, Johannes. 1901. *Prosopographia Attica*. Berlin: G. Reimer.

Kirk, Geoffrey Stephen. 1955. 'Some problems in Anaximander'. *CQ* n. s. 5: 21–38.

Knoeferle, Pia and Matthew W. Crocker. 2009. 'Constituent order and semantic parallelism in online comprehension: eye-tracking evidence from German'. *The Quarterly Journal of Experimental Psychology* 62: 2338–71.

Knox, Bernard M. W. 1968. 'Silent reading in antiquity'. *GRBS* 9: 421–35.

Knox, Bernard M. W. 1985. 'Books and readers in the Greek world. From the beginnings to Alexandria'. In *The Cambridge history of classical literature*, edited by Patricia E. Easterling and Bernard M. W. Knox, 1–16, Cambridge: Cambridge University Press.

Konieczny, Lars. 2000. 'Locality and parsing complexity'. *Journal of Psycholinguistic Research* 29: 627–45.

Kortmann, Bernd. 2001. 'Adverbial clauses'. In *International encyclopedia of the social & behavioral sciences*, edited by Neil J. Smelser and Paul B. Baltes, vol. 1: 162–7, Amsterdam: Pergamon.

Kowerski, Lawrence Melvin. 2005. *Simonides on the Persian Wars. A study on the elegiac verses of the 'New Simonides'*. New York/London: Routledge.

Kraljic, Tanya and Susan E. Brennan. 2005. 'Prosodic disambiguation of syntactic structure: for the speaker or for the addressee?' *Cognitive Psychology* 50: 194–231.

Kugelmeier, Christoph. 1996. *Reflexe früher und zeitgenössischer Lyrik in der alten attischen Komödie*. Stuttgart/Leipzig: Teubner.

Kurzová, Helena. 1988. 'Morphological semantics and syntax in the non-formalized sentence structure of Greek'. In *In the footsteps of Raphael Kühner: proceedings of the International Colloquium in commemoration of the 150th anniversary of the publication of Raphael Kühner's Ausführliche Grammatik der griechischen Sprache, II. Theil: Syntaxe, Amsterdam, 1986*, edited by Albert Rijksbaron, Henk A. J. Mulder, and Gerry C. Wakker, 147–59, Amsterdam: J.C. Gieben.

Kustas, George L. 1973. *Studies in Byzantine rhetoric*. Thessaloniki: *Πατριαρχικό Ίδρυμα Πατερικών Μελετών*.

Lakoff, Robin Tolmach. 1982. 'Some of my favorite writers are literate: the mingling of oral and literate strategies in written communication'. In *Spoken and written language: exploring orality and literacy*, edited by Deborah Tannen, 239–60, Norwood, NJ: Ablex.

Laks, André. 2001. 'Écriture, prose et les débuts de la philosophie grecque'. *Methodos* 1: 131–51.

Lambrecht, Knud. 1994. *Information structure and sentence form: topic, focus, and the mental representations of discourse referents*. Cambridge/New York: Cambridge University Press.

Lane Fox, Robin. 2002. 'Theognis: an alternative to democracy'. In *Alternatives to Athens*, edited by Roger Brock and Stephen Hodkinson, 35–51, Oxford/New York: Oxford University Press.

Lang, Mabel L. 1952. 'A new inscription from Thasos: specifications for a measure'. *BCH* 76: 18–31.

Lang, Mabel L. 1956. 'Numerical notation on Greek vases'. *Hesperia* 25: 1–24.

Lang, Mabel L. 1984. *Herodotean narrative and discourse*. Cambridge, MA: Published for Oberlin College by Harvard University Press.

Lang, Mabel L. 1995. 'Klepsydra'. In *The lawcourts at Athens: sites, buildings, equipment, procedure, and testimonia*, edited by Alan L. Boegehold, 77–8, Princeton, NJ: American School of Classical Studies at Athens.

Langus, Alan, Erika Marchetto, Ricardo Augusto Hoffmann Bion, and Marina Nespor. 2012. 'Can prosody be used to discover hierarchical structure in continuous speech?' *Journal of Memory and Language* 66: 285–306.

Lanni, Adriaan M. 1997. 'Spectator sport or serious politics? *οἱ περιεστηκότες* and the Athenian lawcourts'. *JHS* 117: 183–9.

Laum, Bernhard. 1928. *Das alexandrinische Akzentuationssystem: unter Zugrundelegung der theoretischen Lehren der Grammatiker und mit*

Heranziehung der praktischen Verwendung in den Papyri. Paderborn: F. Schöningh.

Lauro, Leonor J. Romero, Janine Reis, Leonardo G. Cohen, Carlo Cecchetto, and Costanza Papagno. 2010. 'A case for the involvement of phonological loop in sentence comprehension'. *Neuropsychologia* 48: 4003–11.

Lausberg, Heinrich. 1998. *Handbook of literary rhetoric: a foundation for literary study*, translated by Matthew T. Bliss, Annemiek Jansen, and David E. Orton. Leiden: Brill.

Lavency, Marius. 1964. *Aspects de la logographie judiciaire attique*. Louvain: Bureaux du Recueil, Bibliothèque de l'Université.

Leech, Geoffrey N. 1983. *Principles of pragmatics*. London/New York: Longman.

Leonard, Laurence B., Carol A. Miller, Patricia Deevy, Leila Rauf, Erika Gerber, and Monique Charest. 2002. 'Production operations and the use of nonfinite verbs by children with specific language impairment'. *Journal of Speech, Language, and Hearing Research* 45: 744–58.

Lesher, James H. 2010. '*Saphêneia* in Aristotle: "clarity", "precision", and "knowledge"'. *Apeiron* 43: 143–56.

Levinson, Stephen C. 1983. *Pragmatics*. Cambridge/New York: Cambridge University Press.

Levy, Roger. 2005. *Probabilistic models of word order and syntactic discontinuity*. Diss. Stanford, CA.

Levy, Roger. 2008. 'Expectation-based syntactic comprehension'. *Cognition* 106: 1126–77.

Levy, Roger, Evelina Fedorenko, Mara Breen, and Edward Gibson. 2012. 'The processing of extraposed structures in English'. *Cognition* 122: 12–36.

Levy, Roger, Evelina Fedorenko, and Edward Gibson. 2013. 'The syntactic complexity of Russian relative clauses'. *Journal of Memory and Language* 69: 461–95.

Li, Xiaoqing, Yiya Chen, and Yufang Yang. 2011. 'Immediate integration of different types of prosodic information during on-line spoken language comprehension: an ERP study'. *Brain Research* 1386: 139–52.

Lieven, Elena. 2014. 'First language learning from a usage-based approach'. In *Constructions—collocations—patterns*, edited by Thomas Herbst, Hans-Jörg Schmid, and Susen Faulhaber, 9–32, Berlin/Boston, MA: De Gruyter Mouton.

Lilja, Saara. 1968. *On the style of the earliest Greek Prose*. Helsinki: Societas Humanarum Fennica.

Lillo, Antonio. 1993. 'El uso de τε épico con subjuntivo y su relación con la partícula modal'. In *Dialectologica Graeca: actas del II Coloquio Internacional de Dialectología Griega (Miraflores de la Sierra, 19-21 de junio de 1991)*, edited by Emilio Crespo, José L. García-Ramón, and Araceli Striano, 209–20, Madrid: Ediciones de la Universidad Autónoma de Madrid.

Livingstone, Niall. 2001. *A commentary on Isocrates'* Busiris. Leiden/Boston, MA: Brill.

Lloyd, Geoffrey Ernest Richard. 1975. 'The Hippocratic question'. *CQ* n. s. 25: 171–92.

Lloyd, Geoffrey Ernest Richard. 1989. *The revolutions of wisdom: studies in the claims and practice of ancient Greek science*. Berkeley, CA: University of California Press.

Lloyd, Geoffrey Ernest Richard. 1991. *Methods and problems in Greek science: selected papers*. Cambridge: Cambridge University Press.

Longo, Oddone. 1981. *Tecniche della comunicazione nella Grecia antica*. Napoli: Liguori.

Loraux, Nicole. 1986. *The invention of Athens: the funeral oration in the classical city*, translated by Alan Sheridan. Cambridge, MA: Harvard University Press.

Lord, Albert Bates. 1995. *The singer resumes the tale*. Ithaca, NY: Cornell University Press.

Loukina, Anastassia, Burton Rosner, Greg Kochanski, Elinor Keane, and Chilin Shih. 2013. 'What determines duration-based rhythm measures: text or speaker?' *Laboratory Phonology* 4: 339–82.

Love, Tracy E. and David A. Swinney. 1998. 'The influence of canonical word order on structural processing'. In *Sentence processing: a crosslinguistic perspective*, edited by Dieter Hillert, 153–66, San Diego, CA: Academic Press.

Lucas, Donald William. 1972. *Aristotle:* Poetics. Oxford: Clarendon Press.

Luraghi, Silvia. 2003. *On the meaning of prepositions and cases. The expression of semantic roles in ancient Greek*. Amsterdam/Philadelphia, PA: John Benjamins.

Luraghi, Silvia. 2014. 'Typology of Greek'. In *Encyclopedia of ancient Greek language and linguistics*, edited by Georgios K. Giannakis, vol. 3: 450–3, Leiden/Boston, MA: Brill.

Lyons, John. 1977. *Semantics*. Cambridge/New York: Cambridge University Press.

MacDonald, Maryellen C. 1994. 'Probabilistic constraints and syntactic ambiguity resolution'. *Language and Cognitive Processes* 9: 157–201.

MacDowell, Douglas Maurice. 1962. *Andokides:* On the Mysteries. Oxford: Clarendon Press.

MacDowell, Douglas Maurice. 1990. *Demosthenes:* Against Meidias *(Oration 21)*. Oxford: Clarendon Press.

MacDowell, Douglas Maurice. 1994. 'The last of the Attic orators'. *CR* 44: 269–71.

MacDowell, Douglas Maurice. 2000. *Demosthenes:* On the False Embassy *(Oration 19)*. Oxford/New York: Oxford University Press.

MacDowell, Douglas Maurice. 2009. *Demosthenes the orator*. Oxford: Oxford University Press.

Maddoli, Gianfranco. 1992. 'Testo scritto e non scritto'. In *Lo spazio letterario della Grecia antica: La produzione e la circolazione del testo*, edited by Giuseppe Cambiano, Luciano Canfora, and Diego Lanza, vol. I.1: 17–54, Roma: Salerno.

Mariß, Ruth. 2002. *Alkidamas: über diejenigen, die schriftliche Reden schreiben, oder über die Sophisten: eine Sophistenrede aus dem 4. Jahrhundert v. Chr., eingeleitet und kommentiert*. Münster: Aschendorff.

Marković, Daniel. 2006. 'Hyperbaton in the Greek literary sentence'. *GRBS* 46: 127–46.

Marr, John L. and Peter John Rhodes. 2008. *The 'Old oligarch': the Constitution of the Athenians attributed to Xenophon*. Oxford: Aris & Phillips/ Oxbow.

Marshall, Christopher W. 2014. *The structure and performance of Euripides'* Helen. Cambridge: Cambridge University Press.

Marshall, Hallie Rebecca. 2012. '*Clouds*, Eupolis and Reperformance'. In *No laughing matter: studies in Athenian comedy*, edited by Christopher W. Marshall and George Kovacs, 55–68, London: Bristol Classical Press.

Marshall, Marlene Hurley B. 1987. *Verbs, nouns and postpositives in Attic prose*. Edinburgh: Scottish Academic Press.

Martin, Andrea E. and Brian McElree. 2009. 'Memory operations that support language comprehension: evidence from verb-phrase ellipsis'. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 35: 1231–9.

Mathieu, Eric. 2004. 'Hyperbaton and haplology'. In *Triggers*, edited by Anne Breitbarth and Henk van Riemsdijk, vol. 75: 293–330, Berlin: Mouton de Gruyter.

Mathieu, Georges and Émile Brémond. 1928. *Isocrate: Discours. Tome I*. Paris: Les Belles Lettres.

Matić, Dejan. 2003. 'Topic, focus, and discourse structure: ancient Greek word order'. *StudLang* 27: 573–633.

Mattingly, Harold B. 1997. 'The date and purpose of the pseudo-Xenophon *Constitution of Athens*'. *CQ* n. s. 47: 352–7.

McCutcheon, Robert W. 2015. 'Silent reading in antiquity and the future history of the book'. *Book History* 18: 1–32.

McGillivray, Barbara. 2014. *Methods in Latin computational linguistics*. Leiden/Boston, MA: Brill.

McGillivray, Barbara and Alessandro Vatri. 2015. 'Computational valency lexica for Latin and Greek in use: a case study of syntactic ambiguity'. *Journal of Latin Linguistics* 14: 101–26.

McNeill, David, Justine Cassell, and Elena T. Levy. 1993. 'Abstract deixis'. *Semiotica* 95: 5–19.

Meineck, Peter. 2012. 'The embodied space: performance and visual cognition at the fifth century Athenian theater'. *NECJ* 39: 3–46.

Mel'čuk, Igor' A. 1988. *Dependency syntax: theory and practice*. Albany, NY: State University Press of New York.

Mel'čuk, Igor' A. 2009. 'Dependency in natural language'. In *Dependency in linguistic description*, edited by Alain Polguère and Igor' A. Mel'čuk, 1–110, Amsterdam/Philadelphia, PA: John Benjamins.

Mel'čuk, Igor' A. and Alain Polguère. 2009. 'Foreword'. In *Dependency in linguistic description*, edited by Alain Polguère and Igor' A. Mel'čuk, xiii–xxii, Amsterdam/Philadelphia, PA: John Benjamins.

Meltzer, Jed A. and Allen R. Braun. 2013. 'P600-like positivity and left anterior negativity responses are elicited by semantic reversibility in non-anomalous sentences'. *Journal of neurolinguistics* 26: 129–48.

Millender, Ellen G. 2001. 'Spartan literacy revisited'. *ClAnt* 20: 121–64.

Miller, Philip H. 1999. *Strong generative capacity. The semantics of linguistic formalism*. Stanford, CA: CSLI Publications.

Millotte, Séverine, Roger Wales, and Anne Christophe. 2007. 'Phrasal prosody disambiguates syntax'. *Language and Cognitive Processes* 22: 898–909.

Milns, Robert David. 2000. 'The public speeches of Demosthenes'. In *Demosthenes: statesman and orator*, edited by Ian Worthington, 205–23, London/New York: Routledge.

Mirhady, David C. and Carl Schwarz. 2011. 'Dikastic participation'. *CQ* n. s. 61: 744–8.

Missiou, Anna. 2011. *Literacy and democracy in fifth-century Athens*. Cambridge: Cambridge University Press.

Mittelstrass, Jürgen. 2002. 'On Socratic Dialogue'. In *Platonic writings/ Platonic readings*, edited by Charles L. Griswold, 126–42. 2nd edn. University Park, PA: Pennsylvania State University Press.

Momigliano, Arnaldo. 1980. 'The historians of the classical world and their audiences: some suggestions'. In *Sesto contributo alla storia degli studi classici e del mondo antico*, vol. 1: 361–76. Roma: Edizioni di storia e letteratura.

Monteil, Pierre. 1963. *La phrase relative en grec ancien*. Paris: Klincksieck.

Moors, Kent F. 1978. 'Plato's use of dialogue'. *CW* 72: 77–93.

Morgan, Kathryn A. 2000. *Myth and philosophy from the Presocratics to Plato*. Cambridge/New York: Cambridge University Press.

Morgan, Teresa J. 1999. 'Literate education in classical Athens'. *CQ* n. s. 49: 46–61.

Morrison, James V. 2004. 'Memory, time and writing: oral and literary aspects of Thucydides' *History*'. In *Oral performance and its context*, edited by Christopher John Mackie, 95–116, Leiden/Boston, MA: Brill.

Morrison, James V. 2007. 'Thucydides' *History* live: reception and politics'. In *Politics of orality*, edited by Craig R. Cooper, 217–34, Leiden: Brill.

Most, Glenn W. 1986. 'Pindar, *O.* 2.83–90'. *CQ* n. s. 36: 304–16.

Most, Glenn W. 1999. 'The poetics of early Greek philosophy'. In *The Cambridge companion to early Greek philosophy*, edited by Anthony A. Long, 332–62, Cambridge: Cambridge University Press.

Müller, Wolfgang G. 2000. 'Iconicity and rhetoric: a note on the iconic force of rhetorical figures in Shakespeare'. In *The motivated sign*, edited by Olga Fischer and Max Nänny, 305–22, Amsterdam/Philadelphia, PA: John Benjamins.

Musti, Domenico. 1986. 'Democrazia e scrittura'. *S&C* 10: 21–48.

Nagy, Gregory. 1990. *Pindar's Homer: the lyric possession of an epic past*. Baltimore, MD: Johns Hopkins University Press.

Nagy, Gregory. 1992. 'Homeric questions'. *TAPhA* 122: 17–60.

Nagy, Gregory. 1996a. *Homeric questions*. Austin, TX: University of Texas Press.

Nagy, Gregory. 1996b. *Poetry as performance: Homer and beyond*. Cambridge/New York: Cambridge University Press.

Nagy, Gregory. 1997. 'Ellipsis in Homer'. In *Written voices, spoken signs: tradition, performance, and the epic text*, edited by Egbert J. Bakker and Ahuvia Kahane, 167–89, Cambridge, MA: Harvard University Press.

Nagy, Gregory. 1998. 'Homer as "text" and the poetics of cross-reference'. In *Verschriftung und Verschriftlichung: Aspekte des Medienwechsels in verschiedenen Kulturen und Epochen*, edited by Christine Ehler and Ursula Schaefer, 78–87, Tübingen: Narr.

Nakatani, Kentaro and Edward Gibson. 2010. 'An on-line study of Japanese nesting complexity'. *Cognitive Science* 34: 94–112.

Nänny, Max and Olga Fischer. 2006. 'Iconicity: literary texts'. In *Encyclopedia of language & linguistics*, edited by Keith Brown, vol. 5: 462–72. 2nd edn. Amsterdam/London: Elsevier.

Navarre, Octave and Pierre Orsini. 1954. *Démosthène: plaidoyers politiques. Tome I: Contre Androtion, contre la loi de Leptine, contre Timocrate*. Paris: Les Belles Lettres.

Neils, Jenifer. 1987. *The youthful deeds of Theseus*. Roma: Bretschneider.

Nespor, Marina and Irene Vogel. 2007. *Prosodic phonology*. 2nd edn. New York: Mouton de Gruyter.

Nicolai, Roberto. 1992. *La storiografia nell'educazione antica*. Pisa: Giardini.

Nicolai, Roberto. 2004. *Studi su Isocrate: la comunicazione letteraria nel IV sec. a.C. e i nuovi generi della prosa*. Roma: Quasar.

Nicolai, Roberto. 2007. 'The place of history in the ancient world'. In *A companion to Greek and Roman historiography*, edited by John Marincola, 13–26, Malden, MA/Oxford: Blackwell.

Nieddu, Gian Franco. 1982. 'Alfabetismo e diffusione sociale della scrittura nella Grecia arcaica e classica: pregiudizi recenti e realtà documentaria'. *S&C* 6: 233–61.

Nieddu, Gian Franco. 1984. 'Testo, scrittura, libro nella Grecia arcaica e classica: note e osservazioni sulla prosa scientifico-filosofica'. *S&C* 8: 213–61.

Nieddu, Gian Franco. 1993. 'Neue Wissensformen, Kommunikationstechniken und schriftliche Ausdrucksformen in Griechenland im sechsten und fünften Jahrhundert v.Chr.: Einige Beobachtungen'. In *Vermittlung und Tradierung von Wissen in der griechischen Kultur*, edited by Wolfgang Kullmann and Jochen Althoff, 151–65, Tübingen: Narr.

Nieuwland, Mante S. and Jos J. A. Van Berkum. 2006. 'When peanuts fall in love: N400 evidence for the power of discourse'. *Journal of Cognitive Neuroscience* 18: 1098–111.

Nir, Bracha and Ruth A. Berman. 2010. 'Complex syntax as a window on contrastive rhetoric'. *Journal of Pragmatics* 42: 744–65.

Nishinuma, Yukihiro and Akiko Hayashi. 2005. 'Pauses silencieuses dans le dialogue en allemand, coréen et japonais'. *Travaux Interdisciplinaires du Laboratoire Parole et Langage d'Aix-en-Provence* 24: 101–16.

Notopoulos, James A. 1964. 'Studies in early Greek oral poetry'. *HSPh* 68: 1–77.

O'Sullivan, Neil. 1992. *Alcidamas, Aristophanes, and the beginnings of Greek stylistic theory*. Stuttgart: F. Steiner.

Obbink, Dirk. 2001. 'The genre of *Plataea*: generic unity in the new Simonides'. In *The new Simonides: contexts of praise and desire*, edited by Deborah Dickmann Boedeker and David Sider, 65–85, Oxford/New York: Oxford University Press.

Ober, Josiah. 1989. *Mass and elite in democratic Athens: rhetoric, ideology, and the power of the people*. Princeton, NJ: Princeton University Press.

Ober, Josiah and Barry Strauss. 1992. 'Drama, political rhetoric, and the discourse of Athenian democracy'. In *Nothing to do with Dionysos? Athenian drama in its social context*, edited by John J. Winkler and Froma I. Zeitlin, 237–70, Princeton, NJ: Princeton University Press.

Oesterreicher, Wulf. 1997. 'Types of orality in text'. In *Written voices, spoken signs: tradition, performance, and the epic text*, edited by Egbert J. Bakker and Ahuvia Kahane, 190–214, Cambridge, MA: Harvard University Press.

Orth, Christian. 2014. *Aristomenes—Metagenes*. Heidelberg: Verlag Antike.

Osborne, Catherine. 1998. 'Was verse the default form for presocratic Philosophy?' In *Form and content in didactic poetry*, edited by Catherine Atherton, 23–35, Bari: Levante.

Padovani, Roberto, Giovanna Calandra-Buonaura, Cristina Cacciari, Francesca Benuzzi, and Paolo Nichelli. 2005. 'Grammatical gender in the brain: evidence from an fMRI study on Italian'. *Brain Research Bulletin* 65: 301–8.

Panebianco, Venturino. 1970. 'Momenti e problemi di storia eleate nell'età di Pericle'. *PP* 25: 55–64.

Papadopoulou, Despoina. 2006. *Cross-linguistic variation in sentence processing: evidence from RC attachment preferences in Greek*. Dordrecht: Springer.

Pasquali, Giorgio. 1952. *Storia della tradizione e critica del testo*. 2nd edn. Firenze: Le Monnier.

Patillon, Michel. 1997. *Hermogène: L'art rhétorique*. Paris: L'Age d'Homme.

Patillon, Michel. 2002. *Pseudo-Aelius Aristide: Arts rhétoriques. Tome I, Livre I: Le discours politique*. Paris: Les Belles Lettres.

Patillon, Michel. 2005. *Anonymus Seguerianus: Art du discours politique = Τέχνη τοῦ πολιτικοῦ λόγου*. Paris: Les Belles Lettres.

Patillon, Michel and Giancarlo Bolognesi. 1997. *Aelius Theon: Progymnasmata*. Paris: Les Belles Lettres.

Pearson, Lionel. 1939. *Early Ionian historians*. Oxford: Clarendon Press.

Pearson, Lionel. 1976. *The art of Demosthenes*. Meisenheim am Glan: Hain.

Pébarthe, Christophe. 2006. *Cité, démocratie et écriture: histoire de l'alphabétisation d'Athènes à l'époque classique*. Paris/Bruxelles: De Boccard.

Pellegrino, François, Christophe Coupé, and Egidio Marsico. 2011. 'Across-language perspective on speech information rate'. *Language* 87: 539–58.

Pellegrino, François, Jérôme Farinas, and Jean-Luc Rouas. 2004. 'Automatic estimation of speaking rate in multilingual spontaneous speech'. Paper presented at the conference *Speech prosody 2004*, Nara.

Peretti, Aurelio. 1979. *Il Periplo di Scilace: studio sul primo portolano del Mediterraneo*. Pisa: Giardini.

Petruzziello, Luisa. 2009. *Iperide: Epitafio per i caduti del primo anno della guerra lamiaca (PLit.Lond. 133v)*. Pisa/Roma: Fabrizio Serra.

Pfeiffer, Rudolf. 1968. *History of classical scholarship from the beginnings to the end of the Hellenistic age*. Oxford: Clarendon Press.

Pinto, Pasquale Massimo. 2003. *Per la storia del testo di Isocrate: la testimonianza d'autore*. Bari: Dedalo.

Poltera, Orlando. 2008. *Simonides Lyricus. Testimonia und Fragmente*. Basel: Schwabe.

Pompei, Anna. 2006. 'Participles as a non-prototypical word class'. In *World classes and related topics in ancient Greek*, edited by Emilio Crespo, Jesús de la Villa, and Antonio R. Revuelta, 361–88, Louvain-la-Neuve: Peeters.

Porter, John R. 2007. 'Adultery by the book: Lysias 1 (*On the Murder of Eratosthenes*) and comic *Diēgēsis*'. In *Oxford readings in the Attic orators*, edited by Edwin Carawan, 60–88, Oxford/New York: Oxford University Press.

Pownall, Frances. 2007. 'From orality to literacy: the moral education of the elite in fourth-century Athens'. In *Politics of orality*, edited by Craig R. Cooper, 235–49, Leiden: Brill.

Price, Patti J., Mari Ostendorf, Stefanie Shattuck-Hufnagel, and Cynthia Fong. 1991. 'The use of prosody in syntactic disambiguation'. *The Journal of the Acoustical Society of America* 90: 2956–70.

Pritchard, David M. 2004. 'Kleisthenes, participation, and the dithyrambic contests of late archaic and classical Athens'. *Phoenix* 58: 208–28.

Pritchard, David M. Forthcoming. 'Athletic participation, training and adolescent education'. In *The Oxford handbook of sport and spectacle in the ancient world*, edited by Thomas Scanlon and Alison Futrell, Oxford: Oxford University Press.

Pritchett, William Kendrick. 1956. 'The Attic stelai: part II'. *Hesperia* 25: 178–328.

Pritchett, William Kendrick. 1975. *On Thucydides*. Berkeley, CA: University of California Press.

Pritchett, William Kendrick. 2002. *Ancient battle speeches and a palfrey*. Amsterdam: J.C. Gieben.

Probert, Philomen. 2006. *Ancient Greek accentuation: synchronic patterns, frequency effects, and prehistory*. Oxford/New York: Oxford University Press.

Probert, Philomen. 2015. *Early Greek relative clauses*. Oxford/New York: Oxford University Press.

Pugh, Anthony K. 1975. 'The development of silent reading'. In *The Road to Effective Reading: Proceedings of the Tenth Annual Study Conference*, edited by William Latham, 110–19, London: Ward Lock Educational.

Revermann, Martin. 2006. *Comic business: theatricality, dramatic technique, and performance contexts of Aristophanic comedy*. Oxford/New York: Oxford University Press.

Revuelta, Antonio R. 2006. 'Word classes, functions and syntactic level: the case of πάλιν'. In *World classes and related topics in ancient Greek*, edited by Emilio Crespo, Jesús de la Villa, and Antonio R. Revuelta, 455–70, Louvain-la-Neuve: Peeters.

Reynolds, Leighton Durham and Nigel Guy Wilson. 1991. *Scribes and scholars: a guide to the transmission of Greek and Latin literature*. Oxford/New York: Clarendon Press.

Rhodes, Peter John. 1981. *A Commentary on the Aristotelian* Athenaion Politeia. Oxford: Clarendon Press.

Rihll, Tracey E. 2003. 'Teaching and learning in classical Athens'. *G&R* 50: 168–90.

Rijksbaron, Albert. 1997. 'Adverb or connector? The case of καὶ . . . δέ'. In *New approaches to Greek particles: proceedings of the colloquium held in Amsterdam, January 4-6, 1996, to honour C.J. Ruijgh on the occasion of his retirement*, edited by Albert Rijksbaron, 187–208, Amsterdam: J. C. Gieben.

Rijksbaron, Albert. 2002. *The Syntax and semantics of the verb in classical Greek*. 3rd edn. Amsterdam: J.C. Gieben.

Rijksbaron, Albert, Simon R. Slings, Peter Stork, and Gerry C. Wakker. 2000. *Beknopte syntaxis van het klassiek Grieks*. Lunteren: Hermaion.

Roach, Peter. 1998. 'Some languages are spoken more quickly than others'. In *Language myths*, edited by Laurie Bauer and Peter Trudgill, 150–8, London/New York: Penguin Books.

Roberts, Leah. 2013. 'Sentence processing in bilinguals'. In *Sentence processing*, edited by Roger P. G. van Gompel, 221–46, London/New York: Psychology Press.

Roberts, William Rhys. 1902. *Demetrius on style: the Greek text of Demetrius* De elocutione. Cambridge: Cambridge University Press.

Roberts, William Rhys. 1910. *Dionysius of Halicarnassus: on literary composition*. Macmillan: London.

Rohde, Hannah and William S. Horton. 2014. 'Anticipatory looks reveal expectations about discourse relations'. *Cognition* 133: 667–91.

Roisman, Joseph. 2007. 'Rhetoric, manliness and context'. In *A companion to Greek rhetoric*, edited by Ian Worthington, 393–410, Malden, MA/Oxford: Blackwell.

Roland, Douglas, Hongoak Yun, Jean-Pierre Koenig, and Gail Mauner. 2012. 'Semantic similarity, predictability, and models of sentence processing'. *Cognition* 122: 267–79.

Rome, Adolphe. 1952. 'La vitesse de parole des orateurs attiques'. *BAB* 38: 596–609.

Ronnet, Gilberte. 1971. *Étude sur le style de Démosthène dans les discours politiques*. Paris: Boccard.

Rosen, Ralph M. 2006. 'Aristophanes, fandom and the classicizing of Greek tragedy'. In *Playing around Aristophanes. Essays in celebration of the completion of the comedies of Aristophanes by Alan Sommerstein*, edited by Lynn Kozak and John Rich, 27–47, Oxford: Aris & Phillips.

Rösler, Wolfgang. 2002. 'The *Histories* and writing'. In *Brill's companion to Herodotus*, edited by Egbert J. Bakker, Irene J. F. de Jong, and Hans Wees, 79–94, Leiden/Boston, MA: Brill.

Rossetti, Livio. 1991. '*Logoi Sokratikoi* anteriori al 399 a.C.' In *Logos e logoi*, edited by Livio Rossetti and Ornella Bellini, 21–40, Napoli: Edizioni Scientifiche Italiane.

Rossi, Luigi Enrico. 1971. 'I generi letterari e le loro leggi scritte e non scritte nelle letterature classiche'. *BICS* 18: 69–94.

Rossi, Luigi Enrico. 1978. 'Modi di esecuzione musicale (*performance*) e configurazione dei testi nella lirica greca arcaica. L'iperbato artificioso'. Unpublished typescript. Courtesy of the author.

Rossi, Luigi Enrico. 1983. 'Feste religiose e letteratura: Stesicoro o dell'epica alternativa'. *Orpheus* n. s. 4: 5–31.

Rossi, Luigi Enrico. 1992. 'L'ideologia dell'oralità fino a Platone'. In *Lo spazio letterario della Grecia antica: La produzione e la circolazione del testo*, edited by Giuseppe Cambiano, Luciano Canfora, and Diego Lanza, vol. I.1: 77–106, Roma: Salerno.

Rowe, Christopher J. 2007. *Plato and the art of philosophical writing*. Cambridge/New York: Cambridge University Press.

Rubin, David C. 1995. *Memory in oral traditions. The cognitive psychology of epic, ballads and counting-out rhymes*. New York/Oxford: Oxford University Press.

Rubinstein, Lene. 2000. *Litigation and cooperation: supporting speakers in the courts of classical Athens*. Stuttgart: F. Steiner.

Ruijgh, Cornelis Jord. 1971. *Autour de 'τε épique'*. Amsterdam: A. M. Hakkert.

Rummer, Ralf, Johannes Engelkamp, and Lars Konieczny. 2003. 'The subordination effect: evidence from self-paced reading and recall'. *European Journal of Cognitive Psychology* 15: 539–66.

Russell, Donald A. 1981. *Criticism in antiquity*. Berkeley, CA: University of California Press.

Russell, Donald A. 2002. *Quintilian: the orator's education*. Cambridge, MA/London: Harvard University Press.

Rusten, Jeffrey S. 1986. 'Structure, style, and sense in interpreting Thucydides: the soldier's choice (Thuc. 2.42.4)'. *HSPh* 90: 49–76.

Rusten, Jeffrey S. 1989. *Thucydides:* The Peloponnesian War*: Book II*. Cambridge: Cambridge University Press.

Rutherford, Richard B. 1995. *The art of Plato*. London: Duckworth.

Ryle, Gilbert. 1966. *Plato's progress*. Cambridge: Cambridge University Press.

Saenger, Paul. 2000. *Space between words: the origin of silent reading*. Stanford, CA/Cambridge: Stanford University Press/Cambridge University Press.

Salomone, Serena. 1998. 'Una chiarezza ben poco chiara (σαφήνεια, ἔμφασις, ἐνάργεια nel *De elocutione* di Demetrio)'. *Maia* 50: 81–8.

Samek-Lodovici, Vieri. 2005. 'Prosody–syntax interaction in the expression of focus'. *Natural Language & Linguistic Theory* 23: 687–755.

Sayre, Kenneth M. 2002. 'Plato's Dialogues in light of the *Seventh Letter*'. In *Platonic writings/Platonic readings*, edited by Charles L. Griswold, 93–109. 2nd edn. University Park, PA: Pennsylvania State University Press.

Scardino, Carlo. 2007. *Gestaltung und Funktion der Reden bei Herodot und Thukydides*. Berlin: De Gruyter.

Schenkeveld, Dirk M. 1992. 'Prose usages of ἀκούειν "to read"'. *CQ* n. s. 42: 129–41.

Schepman, Astrid and Paul Rodway. 2000. 'Prosody and parsing in coordination structures'. *The Quarterly Journal of Experimental Psychology, Section A* 53: 377–96.

Scheppers, Frank. 2011. *The colon hypothesis: word order, discourse segmentation and discourse coherence in ancient Greek*. Bruxelles: VUB Press.

Schiappa, Edward. 2001. *The beginnings of rhetorical theory in classical Greece*. New Haven, CT/London: Yale University Press.

Schibli, Hermann Sadun. 1990. *Pherekydes of Syros*. Oxford: Clarendon Press.

Schlesewsky, Matthias and Ina Bornkessel. 2004. 'On incremental interpretation: degrees of meaning accessed during sentence comprehension'. *Lingua* 114: 1213–34.

Schloemann, Johan. 2002. 'Entertainment and democratic distrust: the audience's attitudes towards oral and written oratory in classical Athens'. In *Epea and grammata: oral and written communication in ancient Greece*, edited by Ian Worthington and John Miles Foley, 133–46, Leiden/Boston, MA: Brill.

Schmitter, Peter. 1975. 'Compulsory schooling at Athens and Rome? A contribution to the history of Hellenistic education'. *AJPh* 96: 276–89.

Schneider, Stefan. 2007. *Reduced parenthetical clauses as mitigators: a corpus study of spoken French, Italian and Spanish*. Amsterdam/Philadelphia, PA: John Benjamins.

Schramm, Michael. 2005. '*Σύνδεσμος* und *ἄρθρον* in Aristoteles' *Poetik*'. *Glotta* 81: 187–213.

Schreiber, Scott G. 2003. *Aristotle on false reasoning: language and the world in the Sophistical refutations*. Albany, NY: State University of New York Press.

Schütrumpf, Eckart. 1989. 'Form und Stil aristotelischer Pragmatien'. *Philologus* 133: 177–91.

Schwyzer, Eduard. 1939. *Die Parenthese im engern und im weitern Sinne*. Berlin: Walter de Gruyter.

Schwyzer, Eduard and Albert Debrunner. 1950. *Griechische Grammatik. Zweiter Band: Syntax und syntaktische Stilistik*. München: C. H. Beck.

Scodel, Ruth. 2007. 'Lycurgus and the state text of tragedy'. In *Politics of orality*, edited by Craig R. Cooper, 129–54, Leiden: Brill.

Scodel, Ruth. 2011. 'Euripides, the Derveni papyrus, and the smoke of many writings'. In *Sacred words: orality, literacy and religion*, edited by André. P. M. H. Lardinois, Josine Blok, and Marc G. M. van der Poel, 79–98, Leiden/Boston, MA: Brill.

Scollon, Ron and Suzanne Scollon. 1995. 'Somatic communication: how useful is "orality" for the characterization of speech events and cultures?' In *Aspects of oral communication*, edited by Uta M. Quasthoff, 19–29, Berlin/New York: Walter de Gruyter.

Scribner, Sylvia and Michael Cole. 1981. *The psychology of literacy*. Cambridge, MA: Harvard University Press.

Sealey, Raphael. 1955. 'Dionysius of Halicarnassus and some Demosthenic dates'. *REG* 68: 77–120.

Sealey, Raphael. 1993. *Demosthenes and his time. A study in defeat*. New York: Oxford University Press.

Shattuck-Hufnagel, Stefanie and Alice E. Turk. 1996. 'A prosody tutorial for investigators of auditory sentence processing'. *Journal of Psycholinguistic Research* 25: 193–247.

Shillcock, Richard C. 2007. 'Eye movements and visual word recognition'. In *The Oxford handbook of psycholinguistics*, edited by M. Gareth Gaskell, 89–105, Oxford: Oxford University Press.

Shipp, George Pelham. 1979. *Modern Greek evidence for the ancient Greek vocabulary*. Sydney: Sydney University Press.

Sickinger, James P. 2002. 'Literacy, orality and legislative procedure in classical Athens'. In *Epea and grammata: oral and written communication in ancient Greece*, edited by Ian Worthington and John Miles Foley, 147–69, Leiden/Boston, MA: Brill.

Sigurd, Bengt, Mats Eeg-Olofsson, and Joost Van Weijer. 2004. 'Word length, sentence length and frequency—Zipf revisited'. *SL* 58: 37–52.

Simone, Raffaele. 1995. 'Iconic aspects of syntax: a pragmatic approach'. In *Iconicity in language*, edited by Raffaele Simone, 153–69, Amsterdam/Philadelphia, PA: John Benjamins.

Sinclair, John. 1991. *Corpus, concordance, collocation*. Oxford: Oxford University Press.

Skopeteas, Stavros, Caroline Féry, and Rusudan Asatiani. 2009. 'Word order and intonation in Georgian'. *Lingua* 119: 102–27.

Slings, Simon R. 1992. 'Written and spoken language: an exercise in the pragmatics of the Greek sentence'. *CPh* 87: 95–109.

Slings, Simon R. 1997. 'Figures of speech and their lookalikes: two further exercises in the pragmatics of the Greek sentence'. In *Grammar as interpretation: Greek literature in its linguistic contexts*, edited by Egbert J. Bakker, 169–214, Leiden/New York: Brill.

Slings, Simon R. 2002. 'Oral strategies in the language of Herodotus'. In *Brill's companion to Herodotus*, edited by Egbert J. Bakker, Irene J. F. de Jong, and Hans Wees, 53–77, Leiden/Boston, MA: Brill.

Slowiaczek, Maria L. and Charles Clifton, Jr 1980. 'Subvocalization and reading for meaning'. *Journal of Verbal Learning and Verbal Behavior* 19: 573–82.

Sluiter, Ineke. 1990. *Ancient grammar in context: contributions to the study of ancient linguistic thought*. Amsterdam: VU University Press.

Sluiter, Ineke. 2016. 'Obscurity'. In *Canonical Texts and Scholarly Practices*, edited by Anthony Grafton and Glenn W. Most, 34–51, Cambridge: Cambridge University Press.

Small, Jocelyn Penny. 1995. 'Artificial memory and the writing habits of the literate'. *Helios* 22: 159–66.

Small, Jocelyn Penny. 1997. *Wax tablets of the mind: cognitive studies of memory and literacy in classical antiquity*. London/New York: Routledge.

Smyth, Herbert Weir. 1920. *Greek grammar*. New York: American Book Company.

Snedeker, Jesse and John Trueswell. 2003. 'Using prosody to avoid ambiguity: effects of speaker awareness and referential context'. *Journal of Memory and Language* 48: 103–30.

Soffer, Oren. 2010. '"Silent orality": toward a conceptualization of the digital oral features in CMC and SMS texts'. *Communication Theory* 20: 387–404.

Sokolov, Aleksandr Nikolaevich. 1972. *Inner speech and thought*, translated by Donald B. Lindsley. New York: Plenum.

Sommerstein, Alan H. 1997. 'The theatre audience, the demos, and the *Suppliants* of Aeschylus'. In *Greek tragedy and the historian*, edited by Christopher Brendan Reginald Pelling, 63–79, Oxford/New York: Clarendon Press.

Sonkowsky, Robert P. 1959. 'An aspect of delivery in ancient rhetorical theory'. *TAPhA* 90: 256–74.

Spengel, Leonhard. 1840. 'Über die dritte philippische Rede des Demosthenes'. *ABAW* 3: 157–97.

Staub, Adrian. 2011. 'Word recognition and syntactic attachment in reading: evidence for a staged architecture'. *Journal of Experimental Psychology: General* 140: 407–33.

Steiner, Deborah H. 1994. *The Tyrant's Writ*. Princeton, NJ: Princeton University Press.

Steinhauer, Karsten. 2003. 'Electrophysiological correlates of prosody and punctuation'. *Brain and Language* 86: 142–64.

Steinhauer, Karsten and Angela D. Friederici. 2001. 'Prosodic boundaries, comma rules, and brain responses: the closure positive shift in ERPs as a universal marker for prosodic phrasing in listeners and readers'. *Journal of Psycholinguistic Research* 30: 267–95.

Stolterfoht, Britta, Angela D. Friederici, Kai Alter, and Anita Steube. 2007. 'Processing focus structure and implicit prosody during reading: differential ERP effects'. *Cognition* 104: 565–90.

Sturt, Patrick, Frank Keller, and Amit Dubey. 2010. 'Syntactic priming in comprehension: parallelism effects with and without coordination'. *Journal of Memory and Language* 62: 333–51.

Sulzer, Asta-Irene. 1961. *Κλυταῖσι δαιδαλωσέμεν ὕμνων πτυχαῖς oder: Zur Wortstellung und Satzbildung bei Pindar*. Zürich: Aschmann & Scheller.

Svenbro, Jesper. 1976. *La parole et le marbre: aux origines de la poétique grecque*. Lund: Studentlitteratur.

Svenbro, Jesper. 1993. Phrasikleia. *An anthropology of reading in ancient Greece*, translated by Janet Lloyd. Ithaca, NY/London: Cornell University Press.

Swift, Laura. 2010. *The hidden chorus: echoes of genre in tragic lyric*. Oxford: Oxford University Press.

Tannen, Deborah. 1982a. 'Oral and literate strategies in spoken and written narratives'. *Language* 58: 1–21.

Tannen, Deborah. 1982b. 'The oral/literate continuum in discourse'. In *Spoken and written language: exploring orality and literacy*, edited by Deborah Tannen, 1–16, Norwood, NJ: Ablex.

Taplin, Oliver. 1977. *The stagecraft of Aeschylus: the dramatic use of exits and entrances in Greek tragedy*. Oxford: Clarendon Press.

Tarán, Leonardo and Dimitri Gutas. 2012. *Aristotle:* Poetics. Editio Maior *of the Greek text with historical introductions and philological commentaries*. Leiden/Boston, MA: Brill.

Tarrant, Harold. 1996. 'Orality and Plato's narrative dialogues'. In *Voice into text: orality and literacy in ancient Greece*, edited by Ian Worthington, 129–47, Leiden: Brill.

Taylor, Insup and Maurice Martin Taylor. 1983. *The psychology of reading*. New York: Academic Press.

Thesleff, Holger. 1990. 'Presocratic publicity'. In *Greek and Latin studies in memory of Cajus Fabricius*, edited by Sven-Tage Teodorsson, 110–21, Göteborg: Acta Universitatis Gothoburgensis.

Thomas, Rosalind. 1989. *Oral tradition and written record in classical Athens*. Cambridge: Cambridge University Press.

Thomas, Rosalind. 1992. *Literacy and orality in ancient Greece*. Cambridge/New York: Cambridge University Press.

Thomas, Rosalind. 1993. 'Performance and written publication in Herodotus and the Sophistic generation'. In *Vermittlung und Tradierung von Wissen in der griechischen Kultur*, edited by Wolfgang Kullmann and Jochen Althoff, 225–44, Tübingen: Narr.

Thomas, Rosalind. 1995. 'Written in stone? Liberty, equality, orality and the codification of law'. *BICS* 40: 59–74.

Thomas, Rosalind. 2000. *Herodotus in context: ethnography, science and the art of persuasion*. Cambridge: Cambridge University Press.

Thomas, Rosalind. 2003. 'Prose performance texts: *epideixis* and written publication in the late fifth and early fourth centuries'. In *Written texts and the rise of literate culture in ancient Greece*, edited by Harvey Yunis, 162–88, Cambridge: Cambridge University Press.

Thomas, Rosalind. 2009. 'Writing, reading, public and private "literacies". Functional literacy and democratic literacy in Greece'. In *Ancient literacies: the culture of reading in Greece and Rome*, edited by William A. Johnson and Holt N. Parker, 13–42, Oxford/New York: Oxford University Press.

Thomas, Rosalind. 2011. '"And you, the demos, made an uproar": performance, mass audiences and text in the Athenian democracy'. In *Sacred words: orality, literacy and religion*, edited by André. P. M. H. Lardinois, Josine Blok, and Marc G. M. van der Poel, 161–87, Leiden/Boston, MA: Brill.

Todd, Stephen Charles. 2000. *Lysias*. Austin, TX: University of Texas Press.

Todd, Stephen Charles. 2007. *A commentary on Lysias, speeches 1–11*. Oxford: Oxford University Press.

Tompkins, Daniel P. 1972. 'Stylistic characterization in Thucydides: Nicias and Alcibiades'. In *Studies in fifth-century thought and literature*, edited by Adam Parry, 181–214, Cambridge: Cambridge University Press.

Toye, David L. 1997. 'Pherecydes of Syros: ancient theologian and genealogist'. *Mnemosyne* 50: 530–60.

Traxler, Matthew J. and Kristen M. Tooley. 2007. 'Lexical mediation and context effects in sentence processing'. *Brain Research* 1146: 59–74.

Traxler, Matthew J., Rihana S. Williams, Shelley A. Blozis, and Robin K. Morris. 2005. 'Working memory, animacy, and verb class in the processing of relative clauses'. *Journal of Memory and Language* 53: 204–24.

Treves, Piero. 1940. 'La composition de la Troisième Philippique'. *REA* 42: 354–64.

Trevett, Jeremy C. 1992. *Apollodoros, the son of Pasion*. Oxford/New York: Oxford University Press.

Trevett, Jeremy C. 1996a. 'Aristotle's knowledge of Athenian oratory'. *CQ* n. s. 46: 371–9.

Trevett, Jeremy C. 1996b. 'Did Demosthenes publish his deliberative speeches?' *Hermes* 124: 425–41.

Turner, Eric Gardner. 1987. *Greek manuscripts of the ancient world*. 2nd edn. London: University of London, Institute of Classical Studies.

Usener, Sylvia. 1994. *Isokrates, Platon und ihr Publikum: Hörer und Leser von Literatur im 4. Jahrhundert v. Chr.* Tübingen: Narr.

Usener, Sylvia. 2003. 'Isokrates und sein Adressatenkreis. Strategien schriftlicher Kommunikation'. In *Isokrates: neue Ansätze zur Bewertung eines politischen Schriftstellers*, edited by Wolfgang Orth, 18–33, Trier: Wissenschaftlicher Verlag Trier.

Usher, Stephen. 1973. 'The style of Isocrates'. *BICS* 20: 39–67.

Usher, Stephen. 1976. 'Lysias and his clients'. *GRBS* 17: 31–40.

Usher, Stephen. 1999. *Greek oratory. Tradition and originality*. Oxford: Oxford University Press.

Usher, Stephen. 2004. 'Lysias for pleasure?' In *Law, rhetoric and comedy in classical Athens: essays in honour of Douglas M. MacDowell*, edited by Douglas L. Cairns and Ronald Alexander Knox, 113–21, Swansea: Classical Press of Wales.

Vainio, Seppo, Jukka Hyönä, and Anneli Pajunen. 2008. 'Processing modifier-head agreement in reading: evidence for a delayed effect of agreement'. *Memory & Cognition* 36: 329–40.

van Bennekom, Riek. 1975. 'The definitions of σύνδεσμος and ἄρθρον in Aristotle, *Poetics* ch. 20'. *Mnemosyne* 28: 399–411.

van der Eijk, Philip J. 1997. 'Towards a rhetoric of ancient scientific discourse'. In *Grammar as interpretation: Greek literature in its linguistic contexts*, edited by Egbert J. Bakker, 77–129, Leiden/New York: Brill.

Van Dyke, Julie A. 2007. 'Interference effects from grammatically unavailable constituents during sentence processing'. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 33: 407–30.

van Gompel, Roger P. G. 2013. *Sentence processing*. London/New York: Psychology Press.

van Gompel, Roger P. G. and Martin J. Pickering. 2007. 'Syntactic parsing'. In *The Oxford handbook of psycholinguistics*, edited by M. Gareth Gaskell, 284–307, Oxford: Oxford University Press.

van Gompel, Roger P. G., Martin J. Pickering, Jamie Pearson, and Simon P. Liversedge. 2005. 'Evidence against competition during syntactic ambiguity resolution'. *Journal of Memory and Language* 52: 284–307.

van Groningen, Bernard Abraham. 1963. '*Ἔκδοσις*'. *Mnemosyne* 16: 1–17.

Van Wyk Cronjé, Jacobus. 1986. *Dionysius of Halicarnassus:* De Demosthene. *A critical appraisal of the* Status quaestionis. Hildesheim/Zürich/New York: Olms.

Vasishth, Shravan and Heiner Drenhaus. 2011. 'Locality in German'. *Dialogue & Discourse* 2: 59–82.

Vatri, Alessandro. 2012. 'The physiology of ancient Greek reading'. *CQ* n. s. 62: 633–47.

Vatri, Alessandro. 2015a. 'Ancient Greek writing for memory: textual features as mnemonic facilitators'. *Mnemosyne* 68: 750–73.

Vatri, Alessandro. 2015b. 'Asyndeton, immersion, and *hypokrisis* in ancient Greek rhetoric'. Paper presented at the conference *Narrative and Experience in Greco-Roman Antiquity*, Heidelberg.

Vatri, Alessandro. 2016. 'Between song and prose: the meaning(s) of *Harmonia* in Aristotle's *Rhetoric* and *Poetics*'. *Rhetorica* 34: 372–92.

Vatri, Alessandro. 2017. 'Public performance and the language of Antiphon's speeches'. In *A theatre of justice: aspects of performance in Greco-Roman oratory and rhetoric*, edited by Sophia Papaioannou, Andreas Serafim, and Beatrice da Vela, Leiden/Boston, MA: Brill.

Verhoeven, Jo, Guy De Pauw, and Hanne Kloots. 2004. 'Speech rate in a pluricentric language: a comparison between Dutch in Belgium and the Netherlands'. *Language and Speech* 47: 297–308.

Vetta, Massimo. 2000. 'Teognide e anonimi nella Silloge Teognidea'. In *La letteratura pseudepigrafa nella cultura greca e romana. Atti di un incontro di studî, Napoli, 15–17 gennaio 1998*, edited by Giovanni Cerri, vol. 22: 123–41, Napoli: Cangiano grafica.

Voigt, Stefanie and Anja Schüppert. 2013. 'Articulation rate and syllable reduction in Spanish and Portuguese'. In *Phonetics in Europe: perception*

and production, edited by Charlotte Gooskens and Renée Van Bezooijen, 317–32, Frankfurt am Main: P.I.E.—Peter Lang.

von der Malsburg, Titus and Shravan Vasishth. 2011. 'What is the scanpath signature of syntactic reanalysis?' *Journal of Memory and Language* 65: 109–27.

Vonk, Wietske, Lettica G. M. M. Hustinx, and Wim H. G. Simons. 1992. 'The use of referential expressions in structuring discourse'. *Language and Cognitive Processes* 7: 301–33.

Wackernagel, Jacob. 1892. 'Über ein Gesetz der indogermanischen Wortstellung'. *IF* 1: 333–436.

Wagner, Michael and Duane G. Watson. 2010. 'Experimental and theoretical advances in prosody: a review'. *Language and Cognitive Processes* 25: 905–45.

Wagner, Petra, Zofia Malisz, and Stefan Kopp. 2014. 'Gesture and speech in interaction: an overview'. *Speech Communication* 57: 209–32.

Wakker, Gerry C. 2014. 'Text linguistics and Greek'. In *Encyclopedia of ancient Greek language and linguistics*, edited by Georgios K. Giannakis, vol. 3: 389–92, Leiden/Boston, MA: Brill.

Walker, Jeffrey. 2000. *Rhetoric and poetics in antiquity*. Oxford/New York: Oxford University Press.

Wallace, Malcolm B. 1986. 'Progress in measuring amphora capacities'. In *Recherches sur les amphores grecques*, edited by Jean-Yves Empereur and Yvon Garlan, 87–94, Paris: Boccard.

Wallace, Robert W. 1995. 'Speech, song and text, public and private. Evolutions in communicative media and fora in fourth century Athens'. In *Die Athenische Demokratie im 4. Jahrhundert v. Chr.: Vollendung oder Verfall einer Verfassungsform? Akten eines Symposiums 3.-7. August 1992, Bellagio*, edited by Walter Eder, 199–217, Stuttgart: F. Steiner.

Warren, James. 2007. *Presocratics*. Stocksfield: Acumen.

Warren, Tessa and Edward Gibson. 2002. 'The influence of referential processing on sentence complexity'. *Cognition* 85: 79–112.

Warren, Tessa and Edward Gibson. 2005. 'Effects of NP type in reading cleft sentences in English'. *Language and Cognitive Processes* 20: 751–67.

Was, Christopher A. and Dan J. Woltz. 2007. 'Reexamining the relationship between working memory and comprehension: the role of available long-term memory'. *Journal of Memory and Language* 56: 86–102.

Waterfield, Robin. 2004. 'Xenophon's Socratic mission'. In *Xenophon and his World: Papers from a conference held in Liverpool in July 1999*, edited by Christopher J. Tuplin, vol. 172: 79–113, Stuttgart: F. Steiner.

Watson, Duane G. and Edward Gibson. 2005. 'Intonational phrasing and constituency in language production and comprehension'. *SL* 59: 279–300.

Weber, Andrea, Martine Grice, and Matthew W. Crocker. 2006. 'The role of prosody in the interpretation of structural ambiguities: a study of anticipatory eye movements'. *Cognition* 99: B63–B72.

Webster, Thomas Bertram Lonsdale. 1972. *Potter and patron in classical Athens*. London: Methuen.

Webster, Thomas Bertram Lonsdale. 1973. *Athenian culture and society*. London: Batsford.

Węcowski, Marek. 2014. *The rise of the Greek aristocratic banquet*. Oxford: Oxford University Press.

Weil, Henri. 1881. *Les harangues de Démosthène*. 2nd edn. Paris: Hachette.

Wells, Justine B., Morten H. Christiansen, David S. Race, Daniel J. Acheson, and Maryellen C. MacDonald. 2009. 'Experience and sentence processing: statistical learning and relative clause comprehension'. *Cognitive Psychology* 58: 250–71.

Werner, Shirley. 2009. 'Literacy studies in classics: the last twenty years'. In *Ancient literacies: the culture of reading in Greece and Rome*, edited by William A. Johnson and Holt N. Parker, 333–82, Oxford/New York: Oxford University Press.

West, Martin Litchfield. 1971. *Early Greek philosophy and the orient*. Oxford: Clarendon Press.

West, Martin Litchfield. 2003. *Greek epic fragments from the seventh to the fifth century* BC. Cambridge, MA/London: Harvard University Press.

West, William C. III. 1973. 'The Speeches in Thucydides: a description and listing'. In *The Speeches in Thucydides; a collection of original studies with a bibliography*, edited by Philip A. Stadter, 3–15, Chapel Hill, NC: University of North Carolina Press.

Whitehead, David. 2004. 'Isokrates for hire. Some preliminaries to a commentary on Isokrates 16–21'. In *Law, rhetoric and comedy in classical Athens: essays in honour of Douglas M. MacDowell*, edited by Douglas L. Cairns and Ronald Alexander Knox, 151–85, Swansea: Classical Press of Wales.

Whitehorne, John. 2002. 'Aristophanes' representations of "intellectuals"'. *Hermes* 130: 28–35.

Whitley, James. 1997. 'Cretan laws and Cretan literacy'. *AJPh* 101: 635–61.

Wilamowitz-Möllendorf, Ulrich von. 1920. *Platon*. Berlin: Weidmann.

Willi, Andreas. 2003. *The languages of Aristophanes. Aspects of linguistic variation in classical Attic Greek*. Oxford/New York: Oxford University Press.

Willi, Andreas. 2010a. 'Attic as the language of the Classics'. In *Greek: a language in evolution: essays in honour of Antonios N. Jannaris*, edited by Chrys C. Caragounis, 101–18, Hildesheim/New York: Olms.

Willi, Andreas. 2010b. 'Register variation'. In *A companion to the ancient Greek language*, edited by Egbert J. Bakker, 297–310, Chichester/Malden, MA: Wiley-Blackwell.

Willi, Andreas. 2013. 'Epicharmus, Simonides, and the "invention" of the Greek alphabet'. *MH* 70: 129–40.

Wisse, Jakob. 1989. *Ethos and pathos from Aristotle to Cicero*. Amsterdam: A. M. Hakkert.

Wolfsdorf, David. 1998. 'The historical reader of Plato's *Protagoras*'. *CQ* n. s. 48: 126–33.

Wood, Johanna L. 2007. 'Is there a DP in Old English?' In *Historical Linguistics 2005. Selected Papers from the 17th International Conference on Historical Linguistics*, edited by Joseph C. Salmons and Shannon Dubenion-Smith, vol. 284: 167–87, Amsterdam/Philadelphia, PA: John Benjamins.

Woodbury, Leonard. 1976. 'Aristophanes' *Frogs* and Athenian literacy: *Ran.* 52–53, 1114'. *TAPhA* 106: 349–57.

Wooten, Cecil W. 1987. *Hermogenes'* On Types of Style. Chapel Hill, NC: University of North Carolina Press.

Wooten, Cecil W. 2008. *A commentary on Demosthenes's Philippic I with rhetorical analyses of Philippics II and III*. New York: Oxford University Press.

Worthington, Ian. 1991a. 'Greek oratory, revision of speeches and the problem of historical reliability'. *C&M* 42: 55–74.

Worthington, Ian. 1991b. 'The authenticity of Demosthenes' *Fourth Philippic*'. *Mnemosyne* 44: 425–28.

Worthington, Ian. 1993. 'Once more, the client/*logographos* relationship'. *CQ* n. s. 43: 67–72.

Worthington, Ian. 1996. 'Greek oratory and the oral/literate division'. In *Voice into text: orality and literacy in ancient Greece*, edited by Ian Worthington, 165–77, Leiden: Brill.

Worthington, Ian. 2000. 'Demosthenes' (in)activity during the reign of Alexander the Great'. In *Demosthenes: statesman and orator*, edited by Ian Worthington, 90–113, London/New York: Routledge.

Worthington, Ian. 2003. 'The authorship of the Demosthenic epitaphios'. *MH* 60: 152–7.

Worthington, Ian. 2006. *Demosthenes:* Speeches 60 *and* 61, Prologues, Letters. Austin, TX: University of Texas Press.

Worthington, Ian. 2013. *Demosthenes of Athens and the fall of classical Greece*. Oxford/New York: Oxford University Press.

Wray, Alison. 2002. *Formulaic language and the lexicon*. Cambridge/New York: Cambridge University Press.

Yaginuma, Shigetake. 1995. 'Did Thucydides write for readers or hearers?' In *The passionate intellect: Essays on the transformation of classical traditions presented to Professor I. G. Kidd*, edited by Lewis Ayres, 131–42, New Brunswick, NJ/London: Transaction Publishers.

Yatromanolakis, Dimitrios. 2009. 'Ancient Greek popular song'. In *The Cambridge companion to Greek lyric*, edited by Felix Budelmann, 263–76, Cambridge: Cambridge University Press.

Yellin, Keith. 2008. *Battle exhortation: the rhetoric of combat leadership*. Columbia, SC: University of South Carolina Press.

Youtie, Herbert C. 1971. '*Βραδέως γράφων*: between literacy and illiteracy'. *GRBS* 12: 239–61.

Yunis, Harvey. 1996. *Taming democracy: models of political rhetoric in classical Athens*. Ithaca, NY: Cornell University Press.

Yunis, Harvey. 2001. *Demosthenes:* On the Crown. New York: Cambridge University Press.

Yunis, Harvey. 2003a. 'Introduction: why written texts?' In *Written texts and the rise of literate culture in ancient Greece*, edited by Harvey Yunis, 1–14, Cambridge/New York: Cambridge University Press.

Yunis, Harvey. 2003b. 'Writing for reading: Thucydides, Plato, and the emergence of the critical reader'. In *Written texts and the rise of literate culture in ancient Greece*, edited by Harvey Yunis, 189–212, Cambridge: Cambridge University Press.

Zahn, Daniela and Christoph Scheepers. Forthcoming. 'Overt prosody and relative clause attachment in English'. Submitted to *The Quarterly Journal of Experimental Psychology*.

Zimmermann, Bernhard. 1991. *Greek tragedy. An introduction*, translated by Thomas Marier. Baltimore, MD/London: Johns Hopkins University Press.

Ziv, Yael. 1985. 'Parentheticals and functional grammar'. In *Syntax and pragmatics in functional grammar*, edited by A. Machtelt Bolkestein, Caspar de Groot, and J. Lachlan Mackenzie, 181–99, Dordrecht/Cinnaminson, NJ: Foris Publications.

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Both in the index and in the text Greek words have been transliterated when presented, discussed, or used as technical terms or in discussions of technical vocabulary. They have been left in Greek script when used as glosses of English terms or in close readings of Greek texts (see e.g. 103 n. 3).

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